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Illustrations.

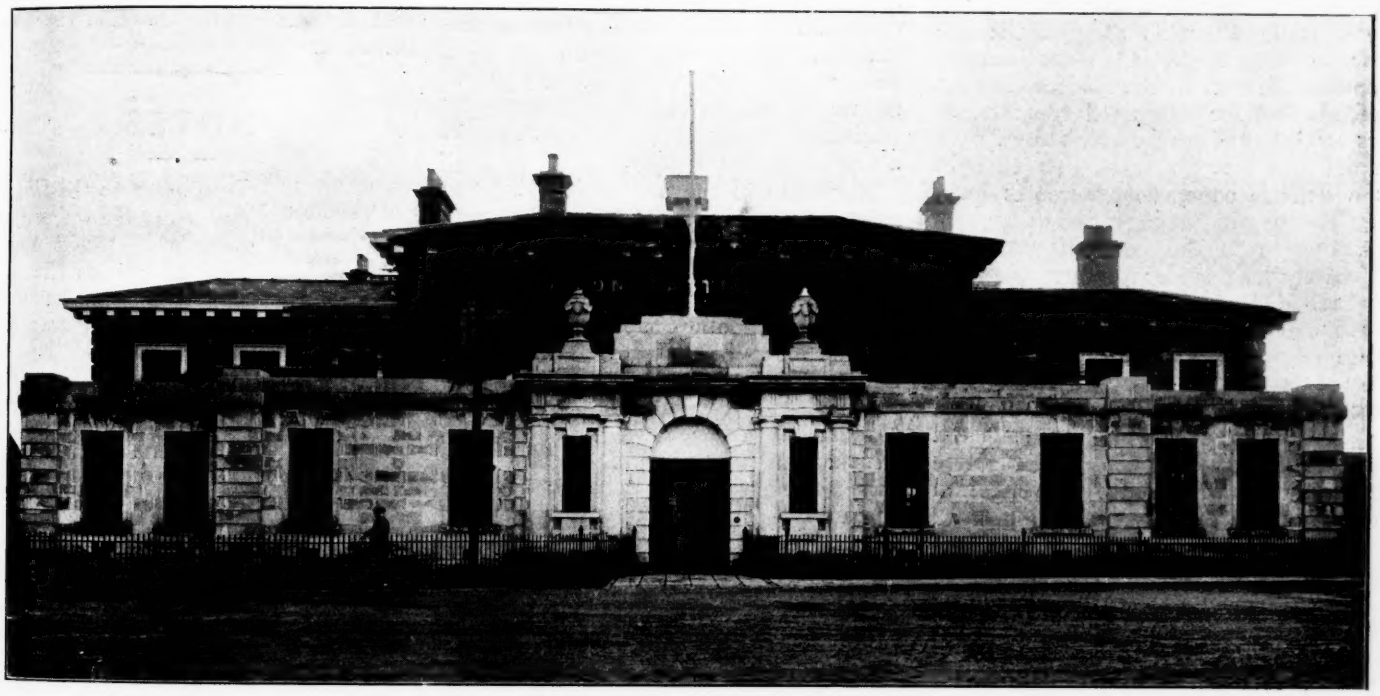
Union-Castle Shipping Offices, Southampton. Mr. W. Flockhart, F.R.I.B.A., in conjunction with Messrs. Lemon & Blizard, FF.R.I.B.A.

R.I.B.A. Owen Jones Prize, awarded to Mr. Noel H. Leaver:—

Portion of Dome in Villa Madama.

Elevation of Chancel of Riccardi Chapel, Florence.

Figures in Fresco, Riccardi Chapel, Florence.



Shipping Company's Offices, Southampton.

From the designs of Mr. W. Flockhart, F.R.I.B.A., in conjunction with Messrs. Lemon & Blizard, FF.R.I.B.A.

The illustration above and the plate reproduction show the appearance since it was altered of the Union-Castle Steamship Company's Offices at Southampton. Particulars of the work appeared in our issue of December 22, 1911 (page 755).

REINFORCED CONCRETE IN ARCHITECTURE.

THE strivings of Continental architects for originality in the way of reinforced concrete architecture have given birth to designs which are grotesque or merely fanciful according to national temperament and feeling, and the efforts of American architects to evolve a distinctive style for reinforced concrete have not been more successful than their preceding attempts to do the same thing for structural steel.

British architects have been content, in our opinion very wisely, to play the waiting game and to abstain from the endeavour to create a new architectural style by the simple but unproductive method of sitting down and trying to evolve one by inductive reasoning. A man might just as well place himself, pencil in hand, before a drawing-table, saying, "Now I will invent something." It cannot be too clearly recognised that in architectonic as in constructive problems "Necessity is the mother of invention."

This fact at once suggests the question whether an original style for reinforced concrete is actually necessary. Let us, then, consider briefly the form and attributes of reinforced concrete as manifested by familiar structural members. Apart from its outer texture, a reinforced concrete column only differs from a stone or timber column in the respect that its transverse dimensions are relatively small, and the difference is similarly limited in the case of a beam, corbel, or other member subject to flexure, and in the case of an arch, vault, or structure of like nature. Hence the only suggestion made by the mechanical properties of reinforced concrete is that structural members and elements formed of the material may be somewhat more slender for equal duty than kindred members and elements of stone or timber. Therefore, from this standpoint reinforced concrete does not suggest a new architectural style or any new form of architectural detail.

We often hear the dictum that reinforced concrete architecture should express the distinctive characteristics of the material. We have already dealt with these from the standpoint of construction, and have now only to consider them architecturally. To begin with, the steel used as reinforcement is always out of sight, and, being quite inexpressible, nothing is left for expression but monolithic concrete.

In order to facilitate matters, we will set down the only features capable of being brought out in reinforced concrete design. These are:—

(1) Relative slenderness of construction.

(2) Monolithic continuity.
(3) Natural texture of concrete.

Relative slenderness can easily be revealed by the designer in the case of columns, beams, and various other members, but there is no possibility of causing the outer surface of a wall to indicate the thinness of the material, except at window and other openings, where close inspection may facilitate discovery of this feature.

Monolithic continuity can readily be denoted by avoiding all appearance or imitation of the joints, courses, projections, and lines fulfilling structural requirements in stone and timber buildings.

The natural texture of concrete, which, of course, may be varied by using sand and aggregate of different tints and degrees of fineness, can be expressed by the simple expedient of leaving the surface exposed.

These three modes of expression certainly do not carry the need for, or the slightest hint of, a new architectural style, while they do suggest the unwelcome thought that the most beautiful traditional forms of architecture are not well adapted for reinforced concrete, or *vice versâ*, as the reader may prefer. We should not like to state this thought as a definite conclusion, for it is quite possible that increasing familiarity with construction in the new material may ultimately lead modern architects to the gradual adaptation of accepted forms, or the evolution of new forms, which will make reinforced architecture an accomplished fact. As far as we can see at present, however, this desideratum will be the result of artistic genius, and not the direct outcome of distinctive characteristics exhibited by the material in question.

Familiarity with construction as a first step towards characteristic design in reinforced concrete is not encouraged by the procedure too largely followed to-day. Sometimes the architect only decides upon the adoption of reinforced concrete after a building has been designed on lines expressive of masonry pure and simple. The Y.M.C.A. Building in Manchester is an example, where, as stated by the architects, reinforced concrete was adopted as an afterthought owing to its convenience and structural advantages. Again, it often happens that the architect evolves his design and then enlists the co-operation of a commercial, or semi-professional, specialist to furnish working drawings of the reinforced concrete details. As the specialist is almost invariably an engineer rather than an architect by education and training, and as the commercial side of his calling predominates, he is not qualified and does not think it politic to make suggestions on points affecting architectural design, and so is not an ideal collaborator.

Instead of following either of the foregoing methods, which we believe to be merely tentative and temporary, the architect should, after forming a general idea of the accommodation to be provided by and the proportions of the proposed building, sketch out for himself the reinforced concrete skeleton and enclosing walls in accordance with constructive principles and conforming with any selected architectural style. The treatment of details and the evolution of appropriate decorative effects will then follow in natural sequence, and the work of the reinforced concrete specialist will be limited to matters of practical import.

By proceeding thus, the architect may be enabled to break away from the common practice, evidenced in connexion with steel as well as with reinforced concrete, of creating buildings which purport to be masonry structures, but in reality are skeletons of other materials simply masked by a skin of masonry.

We do not say that a masonry-faced skeleton necessarily constitutes bad architecture, for it must be remembered that many fine ancient buildings, among which the Colosseum may be cited, are of brick faced with stone, and that numerous modern buildings of unquestionable merit have been similarly treated, the stonework fulfilling a requirement that could not be satisfied by the brick or steel which it hides. Nevertheless, our point remains that the method of sheathing reinforced concrete in this manner, and thereby treating it as a purely structural material, can never induce its adaptation to architecturally traditional forms or to the evolution of a new architectural style.

Reverting to the proposition that the architect should learn to think and design in reinforced concrete if that material seems best fitted for the work in contemplation, we may usefully point out that while reinforced concrete is excellent for ordinary structural members, it is not always satisfactory in the form of thin exterior curtain walls owing to the tendency of these to develop small cracks, which, although quite unimportant structurally, are very undesirable architecturally. This characteristic leads to the favourable consideration of an alternative method embodying the construction of a reinforced concrete skeleton supporting brick or stone walls, but left exposed as an essential feature of the architectural composition, displaying honestly the structural duties performed by, and the real surface and texture of, the reinforced concrete work. The exterior of a building so designed, with reinforced concrete columns connected by beams, lintels, or arches, and the addition of porches, doorways, balconies, window-frames, and other details, would be completed by brick or stone curtain walls, with such decorative treatment as the architect might consider appropriate. The conception is not original, and merely embodies an idea which is an essential feature of early English architecture, and to which reinforced concrete may be applied just as appropriately as oak or timber generally. Moreover, the general principle is one capable of extension to other styles of architecture.

On the whole, it seems probable that the best method of dealing at present with reinforced concrete may be, as proposed not long ago by Professor Beresford Pite, "the employment of traditional architectural forms, suitably modified for execution in concrete." But we look forward with confidence to a further advance in the future as architects gradually bring the influence of their art to bear upon a comparatively new material and method of construction.

Those who hope to create an entirely new form of architectural design for reinforced concrete may be reminded that in the beginning architecture was the result of construction practised during preceding ages and intended to provide solely for physical needs. We cannot in the present age expect to attain success by attempting to reverse this natural system of evolution by seeking to model typical construction out of a mere architectural conception. Nor can we arrive at a new architectural form without the solid foundation of approved construction. So long as reinforced concrete building construction, as practised by commercial firms, has no independent existence, and merely follows the lines set by architects who, perhaps with a few exceptions, make no attempt to design *per se* in reinforced concrete, we cannot expect to witness the growth of a special architectural form for that material. The only way in which such a form can be created is for architects to deal first with the problem of construction, and then to seek artistic inspiration from the results achieved.

NOTES.

The East Sussex Hospital Competition.

IN a letter to the *Hospital* endorsing the opinion that awards in recent competitions, such as the Hastings Hospital, have undoubtedly displayed a total disregard of the practical work for which hospitals should be designed, Mr. William Henman raises an important point of competition ethics. It may be magnanimous, he thinks, on the part of competitors to invariably accept the assessor's awards without complaint; "but is it in the true interests of the public or of the architectural profession?" In other words, is it treating the public quite fairly if when a mistake is made those in a position to know allow the public to be deceived and to imagine that they are getting the best design? The public puts confidence in the profession and trusts to it to select the best design. This confidence is seldom misplaced; but assessors being only human, mistakes must sometimes occur. Should one be made, and be deliberately hushed up, would the public be entitled to call this a breach of confidence? If a code of professional etiquette renders such deception necessary, is that code a sound one? We quite see the difficulty. Everyone wishes to play the game, and long may the wish prevail; but, nevertheless, the public may not see why they should have to put up with a bad building in order that architects may pride themselves on being good sportsmen. Neither should there be any danger that the sportsmanlike instincts of the competitors might be traded upon to bolster up any particular system of assessing, nor should the competitors be forced to choose between their loyalty as citizens or as professional men. It is certainly a question whether the erection of an inferior and inadequate building does not lower the profession in the eyes of the public more than the acknowledgment and rectification of an unfortunate

mistake, and whether true loyalty to the profession would not choose the lesser evil. We are, however, entirely opposed to the reopening of competitions in public, but, all the same, a position which should never have arisen should not be allowed to continue. Where revision is necessary it should be by a properly-constituted professional tribunal. The Competitions Committee of the Institute might perhaps be strengthened for this purpose.

Architecture and Window-Breaking.

IF the smashing of the largest available sheet of plate-glass is to become the recognised method of calling attention to grievances of every description, great changes may be expected in the architecture of our shop fronts. Smaller panes may again come into use, and the æsthetic problem of the large plate-glass window be solved or rather smashed by the hammer that ventilates a grievance and a shop with one blow. It is just possible that many an architect whose æsthetic arguments have failed to make an impression on a hard-headed race of shop-keepers may view with complacency that produced by the weightier and more convincing argument of the hammer, and be led thereby to admire the way in which all things work together for good. Or will science triumph over reaction with a patent hammer-proof glazing, and save us from designing down to the level of our most downtrodden and from illustrating once more the well-worn truism that art reflects the manners—or lack of manners—of the times and cannot advance beyond them? If our museums are to be reopened, with their contents protected from the fate which overtook the Portland vase, some such invention seems needed. But although, in the meanwhile, where museums are concerned, it is easy to protect the nation's art treasures from the too enthusiastic admiration of some of their owners by the simple expedient of shutting the doors, are there not bronze frock-coated warriors and politicians adorning our streets, priceless relics of the golden age of early Victorian art, who stand unprotected at the mercy of the hammer? They may not be so easy to break as a Tanagra figure, and therefore may escape, but iron on hollow bronze makes almost as soul-satisfying a sound as on glass, so let the authorities beware.

The London Museum.

IT is uncertain when the London Museum, which the King visited yesterday, will be opened to the public. The undesirable attentions of the window smashers are feared. But when the day comes architects will find among the things collected many objects of interest. Kensington Palace and Wren's Orangery adjacent are themselves attractive, but the contents of the former building and of the new annexe claim a special pilgrimage. In the Royal Palace are gathered innumerable relics of London in other days, including topographical and map engravings, Hollar's delightful water-colour of "Westminster Abbey," Hogarth's oil, "Southwark Fair," and many of Mr. Norman's drawings. It is, however, in the annexe that most of the objects of architectural importance are housed. We do not refer particularly to the old Roman boat, found on the site of the County Hall, to the prison cells from Wellclose-square, or to the various excellent models of old buildings, all of which are valuable from a constructional and historical point of view. We direct attention rather to the structural and decorative relics which have found their way appropriately enough into the new Museum. There are balusters, overmantels, a balustrade by Inigo Jones from 32, Lincoln's Inn-fields, less solid but more ornamental staircase fittings from 2, Portsmouth-street, Lincoln's Inn, and from 34, Redman's-row, Stepney, wooden doorways, linen-fold panelling, and four fine oak corbels from a house in Wandsworth. These are a few of the things which make the annexe instructive, and architects will contrive, no doubt, to supplement them as opportunities occur.

Ecclesiastical Metalwork.

SOME excellent hand-wrought ecclesiastical metalwork, made by the Duchess of Sutherland's Cripples' Guild, is now on view at 13 and 14, New Bond street, London, W. The Guild was founded some twelve years ago by the Duchess of Sutherland for the purpose of giving employment to crippled lads. It sought to develop their artistic instinct, and to teach them, sorely handicapped as they were, how to lead happy and useful lives, rather than to look for and lean upon charitable relief as the only mitigation of their sufferings. The work on view and for sale at the London depôt proves that the experiment has been more than justified, and these lads bid fair, in spite of adverse conditions, to rival in their productions the delicate artistry of past centuries. The Guild are workers in gold, silver, copper, brass, and silvered copper and enamels, and they can execute architectural fitments, repoussé work, etc. The work of the Guild is deserving of the support of the profession and the public, and we have pleasure in calling attention to it.

The French Ministry of Fine Arts.

A NEW Under-Secretary of State for Fine Arts has been appointed in France. His name is M. Léon Bérard; he is thirty-six and a successful *avocat;* he has also been a Deputy since 1910. He has, further, occupied the position of a former private secretary to the present Prime Minister. According to the *Temps*, he has had something to do with men of letters and artists generally. His qualifications for his present position would therefore seem, on the face of it, somewhat negligible; and a similar appointment in England would no doubt encounter a good deal of criticism. But in France the position of art is held in higher general estimation than here. It would be difficult to find in that country a man who possesses the qualifications of a barrister who does not also possess the respect common to his countrymen for artistic effort. Apart from that, his position as a barrister in the social economy is certainly not higher than an artist's; a man who professes law gains no more respect from his fellow-man than he who professes art. In these circumstances there is something to be said for the appointment of a man with a legal training. He may be able to balance issues with greater nicety and to distinguish with some discernment the various values of expert advice which it will be necessary for him to seek in the employment of his office.

[This is an illustration of the plumb-rule used in laying the foundation-stone of the L.C.C. Hall. It is the work of the Bromsgrove Guild, who also made the mallet, the level, and the bronze casket in which the coins and documents deposited under the foundation-stone were placed.]

ROMAN REMAINS IN BRITAIN.

Professor F. J. Haverfield lectured on "The Discoveries of Roman Remains in Britain in 1912," at the British Academy recently, and in the course of his remarks he said there had been only one excavation on a great scale in 1911, that of Corbridge. Silchester and Caerwent were now finished for the present; Verulam had fallen through; Wroxeter, though in active preparation, had not yet been begun. Instead, there had been a most regrettable mass of more or less abortive work—excavations planned but never commenced, or commenced with imperfect means and inexperienced supervisers, or left for years with their results undescribed. The last year or so had seen much of this, and it did no honour to British archæology.

GERMAN EXCAVATIONS AT MILETUS.

The Berlin Correspondent of the *Times* writes that Dr. Theodor Wiegand, the Director of the Berlin collections of antiquities, recently gave an account before the Prussian Academy of Sciences of the principal results of the recent German excavations at Miletus and on the site of the neighbouring Temple of Apollo at Branchidae. After some account of the work on the prehistoric settlement of Miletus he described the good progress made with the excavation of the Hellenistic town. A building of delicate Corinthian work has been brought to light in the south market. The clearing of the Serapeion has been completed, and the fragments of the entablature and pediment of the entrance hall of six columns can be pieced together. A copy of the head of the Canachus Apollo was found on the site. North of the Serapeion and west of a street which continued the line of the Sacred Way the excavators have traced a rectangular peristyle court with an *exedra* and a gymnasium or a small *palaestra* to the south of it. On the neighbouring site of Branchidae five more of the seated archaic figures have been discovered on the line of the Sacred Way. The eastern half of the great Temple of Apollo has been completely cleared.

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THE usual fortnightly meeting of the Royal Institute of British Architects was held at No. 9, Conduit-street, W., on Monday, Professor R. Blomfield presiding.

Mr. H. T. Hare announced the decease of Dr. Phené, Fellow, elected in 1872, and a vote of condolence was passed to the relatives.

Mr. W. H. Ward then read a long paper, of which the following is an abstract, on

THE ARCHITECTURE OF THE RENAISSANCE IN FRANCE.

"No country outside of Italy made the teaching of the Renaissance in architecture so thoroughly her own as France.

By the time Francis I. came to the throne on January 1, 1515, Renaissance forms had become acclimatised. Though Italians were still frequently employed, the French builders had acquired some skill in the new style. The result was that a number of buildings began to arise, which have been characterised as French construction in Milanese dress. The qualities which charm in this style, the style of Francis I. as it is called, which prevailed roughly from 1515 to 1540 or 1545, are its picturesque and somewhat haphazard grouping, its ingenious use of Italian motives to clothe native building forms in a delicate embroidery of ornament. The early Renaissance was not always smiling, and we see it in a more serious mood in the castle of St. Germain, largely rebuilt by Francis I. about 1540. Yet we must not expect from it the highest achievements of which architecture is capable. The art of composition was in its infancy. But some time before the end of Francis I.'s reign, from, say, about 1530, a new type of design began to come into competition with that which bears his name.

Up to this point the architect in the modern sense had scarcely emerged. He had hardly disentangled himself from the master mason, the master carpenter, and the clerk of works. From this time onwards a new generation of men arose, whose training was theoretical as well as practical, men like Philibert de l'Orme, Jacques Androuet du Cerceau, and Jean Bullant. This brought about one side of the change. The other was due to the new sources of inspiration, for both the young French architects and the Italians whom Francis continued to attract to France were now imbued with the ideas of the mature or Roman phase of the Renaissance. The effect was soon seen in schemes considered as a whole from the start, in a broader manner, a greater regularity and symmetry, in a more systematic use of the Orders, and a more scholarly treatment of detail, as well as in the shedding of much mediæval practice, particularly such as related to fortification. At the same time, much that was both national and picturesque was retained. There had thus been evolved an architecture which, if it still bears upon it both the faults and the charm of youth, may yet be regarded as having reached the first stage of maturity. France, within the middle years of the XVIth century, had arrived at a style based on the classic code of forms and composition, which suited her then requirements.

Renaissance architecture in France may be said to have reached, in the mid-XVIth century, a stage of at least incipient maturity, not only as regards the character of its buildings *per se*, but because it already contained, either in germ or fully developed, nearly all the elements which went to the making of subsequent styles. But in each country of Europe it seems that some untoward circumstance was destined to arrest the flow of Renaissance development, or at least to check it for a time, with the result that, when it was released once more, the environment had sometimes become less propitious. In France the life of the nation was absorbed for a generation in the Civil Wars, which raged intermittently from the death of Henry II. in 1559 to the final recognition of Henry IV. in 1596. The two centuries which followed, from the reorganisation of France as a centralised State to the Great Revolution, coincided with the rule of the Bourbon dynasty, and witnessed the growth, culmination, decline, and collapse of Absolute Monarchy. The architecture of this period is essentially one, though it passes through various changes of taste, affecting principally the decorative system. It represents the full maturity of Renaissance architecture in France in various moods; and these moods reflect the changing conditions of society and politics, thought and literature. They may be roughly grouped under the names of the four Louis whose joint reigns cover all but the first fifteen years of the period. Though the style of Henry IV. is a recognised designation, it is practically indistinguishable from that of Louis XIII. It is only a little less formed. The culmination of the Louis XIII. manner may be placed about 1630, and its influence is traceable here and there in the provinces almost to the end of the century. But long before the death of Louis XIII., in 1643, a different spirit had begun to come over architecture. Architectural studies having been neglected during the later years of the Civil Wars, the architectural profession was rather at a low ebb, and suffered from a dearth of capable men. With the XVIIth century, however, classical studies revived. The reign of Henry IV. produced some notable works rising above the general run of coign and panel architecture. The junction of the Louvre and the Tuileries elicited dignified architectural efforts, whose authorship, however, is still shrouded in some obscurity. But the first quarter of the XVIIth century produced one architect of great talent in Salomon de Brosse. As a grandson of Jacques Androuet du Cerceau, and nephew of the latter's two sons, who were all architects in the Royal employ, he inherited a high tradition of design, and was well fitted by his training, as well as by his position as First Architect to the Crown, to sum up in monumental works all that was best in current methods, and add to them a touch of classical dignity. De Brosse, however, remained a little heavy, even when at his best. But the classicising tendency, the first symptoms of which reappeared in his work, was maintained throughout the succeeding period from 1624 to 1661. The greatest architect of the XVIIth century was François Mansart. In his early Château of Balleroy, begun in 1626, we find him using, but using finely, the "chaîne" and coign system of the day. But in the work carried out by him at Blois between 1635 and 1640 for Gaston of Orleans, though it is obviously reminiscent, in plan and general grouping, of the Luxembourg, he strikes a new note of stateliness, and shows a new sense of scale. But there is still a trace of the heaviness typical of the Louis XIII. manner. All heaviness has entirely disappeared from his work in the noble mansion of Maisons, begun in 1642. Having reached this degree of consummate accomplishment, Mansart maintained it till the end of his career. That among architects Mansart was not an isolated case is proved by an examination of the great buildings of the last years of Mazarin's life. The charming Hôtel de Beauvais, in Paris, built in 1656, is a standing illustration of that same ideal of perfection of form which pervaded the thought of that age.

The contemporary Château of Vaux-le-Vicomte is of great interest from several points of view. Nicolas Fouquet, the minister who hoped to succeed Mazarin, determined to have the most sumptuous mansion of the age. His architect was Louis Le Vau, who was to continue the Louvre, complete the Tuileries, and begin the transformation of Versailles. His decorator was Charles Le Brun, who was to reign supreme over the decorative arts for a generation. His estate was laid out by André Le Nôtre, whose word was to be law in garden design throughout Europe for nearly a century. Le Vau's work, while never reaching the supreme accomplishment of François Mansart, and less certain in a sense of scale, is always dignified and often touched with some degree of imagination.

Up to the 'sixties the chief glories of XVIIth-century architecture are the sumptuous mansions in town and country in which the nobles embodied their uncurbed ambition, as well as their cultured tastes and splendid patronage of art. The next thirty gave birth to Versailles and the Invalides, to splendid palaces and pompous monuments. The change is symbolised in the very character of the architecture, as well as the purposes to which it was applied. Before, we have multiplicity; after, unity. Before, great buildings are broken up into pavilions and galleries, with roofs of varying height and important dormers, and small Orders prevail; after, we have single unbroken masses, continuous or concealed and balustraded roofs, and colossal Orders. By Fouquet's fall the group of artists he had gathered round him was set free to serve Louis. Le Vau and Le Nôtre and Le Brun were set to work to transform the royal châteaux into palaces worthy of the great King. What Le Nôtre did for garden design was in accordance with the whole trend of the age. He unified and centralised. The genius of Le Brun, though he was no mean artist, manifested itself likewise chiefly in organisation, in the success with which he gathered together an immense personnel of artists and craftsmen of every description, native and foreign, and turned their various aptitudes to account. Of Fouquet's trio only Le Vau, though a very capable architect, failed to be quite equal to the spirit of the time. His design for the east front of the Louvre, conceived on traditional lines, was shelved in favour of Bernini's and eventually Perrault's, and his chief activity was transferred to Versailles and the Tuileries. The advent of Bernini among the French architects in 1665 to design the east front of the Louvre was the touch needed from outside to precipitate the transformation towards which all things had been moving. Bernini's design, whatever its defects—and it is certainly a fortunate escape for Paris that it was not carried out—had the merit of striking a single unmistakable note. If this change in the aims of architecture was in all respects a gain is open to question.

The stage which classical architecture in France had reached after a century and a half of experiment now crystallised, and was perpetuated till the Revolutionary era by the precept and example of the Academy of Architecture founded at this time under royal auspices. This stage may be described as a kind of free Palladianism based on study of the antique and of the Italian writers of the XVIth century, but it did not demand slavish or pedantic imitation; it had the antiseptic of common sense. Its chief spokesman was the elder François Blondel, the architect of the Porte St. Denis, and its chief exponent, Jules Hardouin Mansart.

Jules Hardouin Mansart, great-nephew of François Mansart, who succeeded to the post of architect to all the royal buildings at Le Vau's death in 1670, was wholly of the new way of thinking. At Versailles he was handicapped from the start, and his efforts to redeem the scale were doomed to at least partial failure. The transference thither of the seat of government, as well as of the Court, necessitated enormous increase of accommodation. Circumstances obliged Mansart to obtain this by throwing out two vast wings north and south in such a manner as to leave Le Vau's work as an unsatisfactory central projection, which has been the butt of criticism ever since. None can have felt the ineffectiveness of this arrangement more than he, but even Louis XIV.'s megalomania must have recoiled from the colossal expense of the only course which could have obviated it—the building of great terminal wings of equal or greater projection.

Le Brun died in 1690, but his influence had waned before that, and a lighter, more playful manner had begun to be visible in the works of Bérain and other contemporary designers. J. H. Mansart himself began to modify the solemnity of the interiors he designed. A new age was at hand. In 1715 the old King died unregretted. His successor was a child, and the seven years' Regency of Philip of Orleans flashed past in a whirl of frivolous and profligate gaiety.

The western suburbs began to be covered with a host of new "hôtels" by all the fashionable architects of the day, among whom were Robert de Cotte, Mansart's son-in-law and partner; Cailletau, his assistant; and Jacques Jules Gabriel, his relative and subordinate in the royal works.

The architecture of the first half of the XVIIIth century maintains as a whole the massive monumental character and relatively purer classicism of the late XVIIth. The restlessness of the reaction from the previous solemnity appears almost exclusively in matters of detail, in that same revolt from the supremacy of the straight line and right angle which had betrayed itself at earlier periods. This new tendency of the correct official art of the Court and capital to relax its formality in the caprices of Bérain and Watteau was reinforced by the barocco influence from Italy.

If the rococo fashion has been dealt with severely in our day, it did not escape criticism in its own. Reverend seniors of the Academic School felt it incumbent on them to appear shocked at forms for which Vitruvius gave no sanction, and to condemn them by precept, if not by example. But it met with more whole-hearted opposition from men who were caught in a current in the theory of design which was beginning to set in an entirely different direction.

Exactly where and when the reaction originated it may not be possible to determine, but it gained force from the general spirit of learned inquiry which pervaded the XVIIIth century, and brought about researches into the architecture of Rome and Greece, both in Europe and Asia. The first systems of change in French architecture betrayed a Roman rather than a Greek influence. The new phase of style, which began to arise between 1730 and 1750, was practised concurrently with the old between 1750 and 1770, and reigned supreme during the twenty years which preceded the Revolution, has received the name of Louis XVI., who, however, did not come to the throne till 1774. In addition to its return to purer classical types and to a general abandonment of flowing curves in plan and decoration in favour of severe geometrical forms, it is characterised by greater simplicity—that is, it avoids not only twirls and flourishes, but unnecessary breaks and elaborations, and affects quieter lines generally.

The movement did not become general till the conversion of the royal architect, Jacques Ange Gabriel, which took place about 1750. Gabriel was destined to give it its most monumental and suave expression, without either the effeminacy which sometimes characterised interior decoration, or the frigidity from which the Pantheon, perhaps the greatest achievement of the age, is not altogether free. Few men have ever had greater opportunities than Gabriel, or been so well fitted to use them. He new all the resources of traditional French design, and used them with consummate success, obtaining the same broad, massive effects as the XVIIIth century had achieved, but without their bombast and occasional brutality. In works of the school of Gabriel architecture seemed to have reached a stage of breadth and scholarship equal to the expression of all possible needs, but nothing human can be final, and, in certain works contemporary with his, symptoms are to be found of the general unrest in which European society was plunged in the second half of the XVIIIth century—signs of a dissatisfaction with established institutions and traditions. For the time being this unrest manifested itself in an intensified archæological tendency. It also became the fashion to copy ancient buildings with a literalness hitherto unknown."

Mr. E. Warren,
in proposing a vote of thanks to the author, said he was not quite in accord with the opening words of the paper, that "no country outside of Italy made the teaching of the Renaissance in architecture so thoroughly her own as France." It seemed to him that France did not accept the teaching of the Renaissance so unreservedly as some other countries. France assimilated the spirit and nationalised it, but he did not think she accepted the literal teaching of the Renaissance even so much as we did in England. In England it came a great deal later, but England never assimilated the French influence as did other countries. Even in Holland there were thoroughly French-looking buildings quite early in the XVIIth century, and in Spain and Italy they found almost absolutely French versions of the Italian Renaissance. French architects did not seem to be so happy as the architects of northern countries in being able to build in brick without the intervention of stone. There were some brick buildings in Toulouse, but to his mind they were absolutely dismal in effect.

Mr. H. H. Statham,
in seconding the motion, said there was one particular quality in which the French Renaissance seemed to differ from the Italian. The Italians never really took to the Gothic, and as soon as they got hold of the Classic idea again they began to reproduce. On the other hand, France had behind it a great period of the most romantic style of which they were practically the inventors, and it was owing to that that the early French Renaissance took such a peculiarly picturesque form, quite apart from the comparatively cold way in which it was developed in Italy. Whatever might be said about the corrupt style of the early French Renaissance, he thought it had a very great fascination, and he thought it was one of the styles which had done more than anything else to add to the happiness of mankind.

The Chairman
said the Italian Renaissance they could dissect and classify, but France had never been in that position, and had always maintained throughout some thread of tradition. The French Renaissance was split up into three periods: There was the first period of the amateurs, when people came back from Italy filled with ideas, but really knowing nothing about it. They insisted on the builders carrying out those ideas, and they did their best. Secondly, they came to the period of the architects proper, and they had a very good time as long as the Court lasted. Then came a period of unrest, and the XVIth century went out in a state of chaos. In the last twenty years of the century the architects did little in France. Then came the reorganisation of the arts under Henry IV., who put the whole of France on its legs again. This was the most important period of the French architect, because during that time the art finally became that vernacular art of France—it became the art of the people. On the old general question Mr. Ward's paper seemed to lend colour to the statement sometimes made that art moves in a circle, and that it wanted a catastrophe like the French Revolution to clear the air and allow a fresh start to be made. He did not believe this. He believed that they really were moving forward, and that students would do well to study these great masters instead of taking up various fashions for study.

The motion having been heartily agreed to,

Mr. Ward
briefly replied, and said he cordially accepted Mr. Warren's correction. He did think, however, that the French influence did have considerable effect in England, and he was looking at some ornaments and monuments in Worcester Cathedral the other day which might well have come from a French book published about 1630. The date of the work he referred to was, however, about 1660 to 1670. In other places the French influence could be seen, but it came about twenty or thirty years later.

THE CARPENTERS' HALL LECTURES:

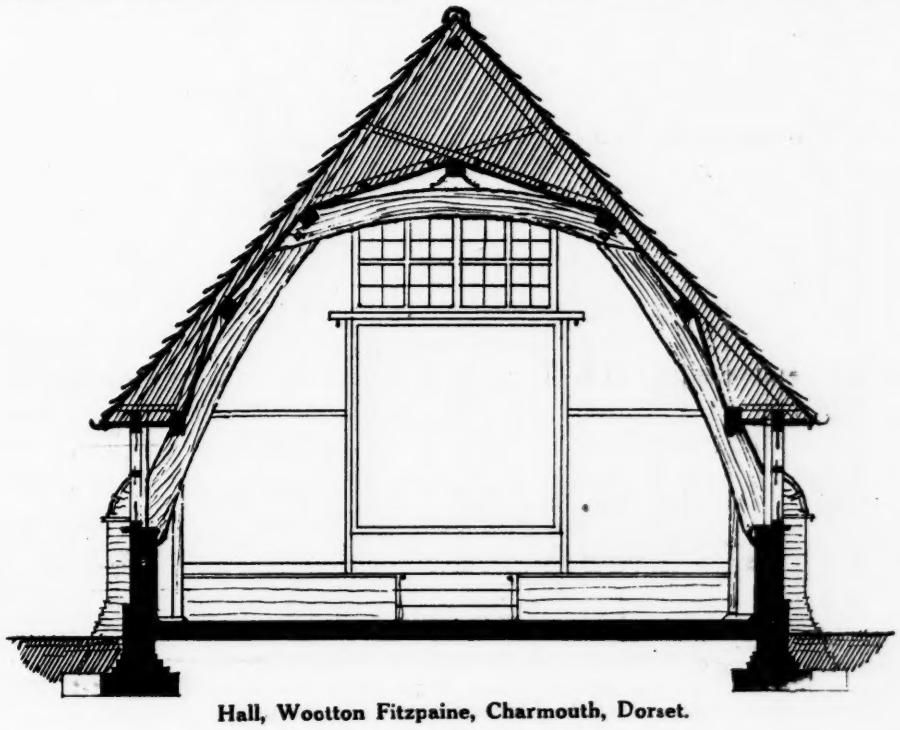
ROOFS AND ROOFING.

THE eighth of the course of Carpenters' Hall lectures on the "Arts Connected with Building" was delivered on Wednesday last week by Mr. W. Curtis Green, F.R.I.B.A., whose subject was "Roofs and Roofing," Mr. P. A. Crisp, F.S.A., presiding.

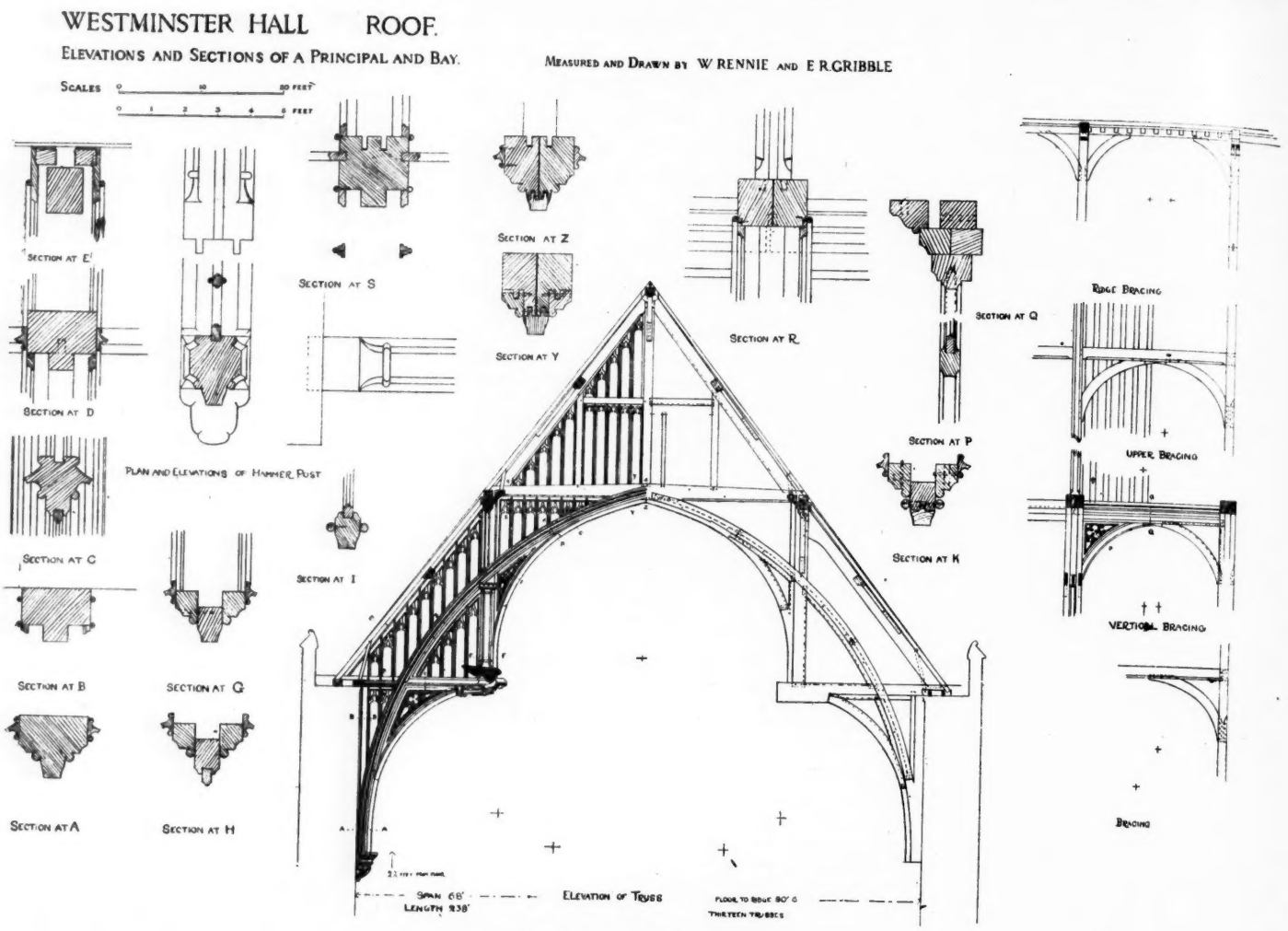
The lecturer showed a number of interesting lantern slides, and in the course of his remarks he said:—

"Our task as craftsmen is, in the first instance, to see that we never produce less than fine prose, and never to lose sight of the goal, which is to create poetry of things in themselves commonplace. The training is one of mind as well as of eye and hand, for the mind to resolve the apparently complex and obscure requirements of the problem into its component parts before the eye or the hand come into play. This is the essence of style and of all progress in art. We must take to heart the saying of Emerson—"that the line of beauty is the line of perfect economy." Remember that all fine achievement comes from inspiration grafted on knowledge—the knowledge of long apprenticeship and of hard work.

Of the two ways of studying the past our concern is with the spirit in which the work was done rather than with the form it took. Archæological knowledge does not make a craftsman; it may by confusing the issue be his undoing. Until the XVth century men did not study the building arts of past times: they handed on the ways and customary methods of their own day, each generation and each race making its contribution to the advance, to the sum of achievement. I cannot satisfy some of my friends or offend others by finding faults with the Renaissance, with the various revivals, or with our own civilisation. We have not time for barren discussion; our



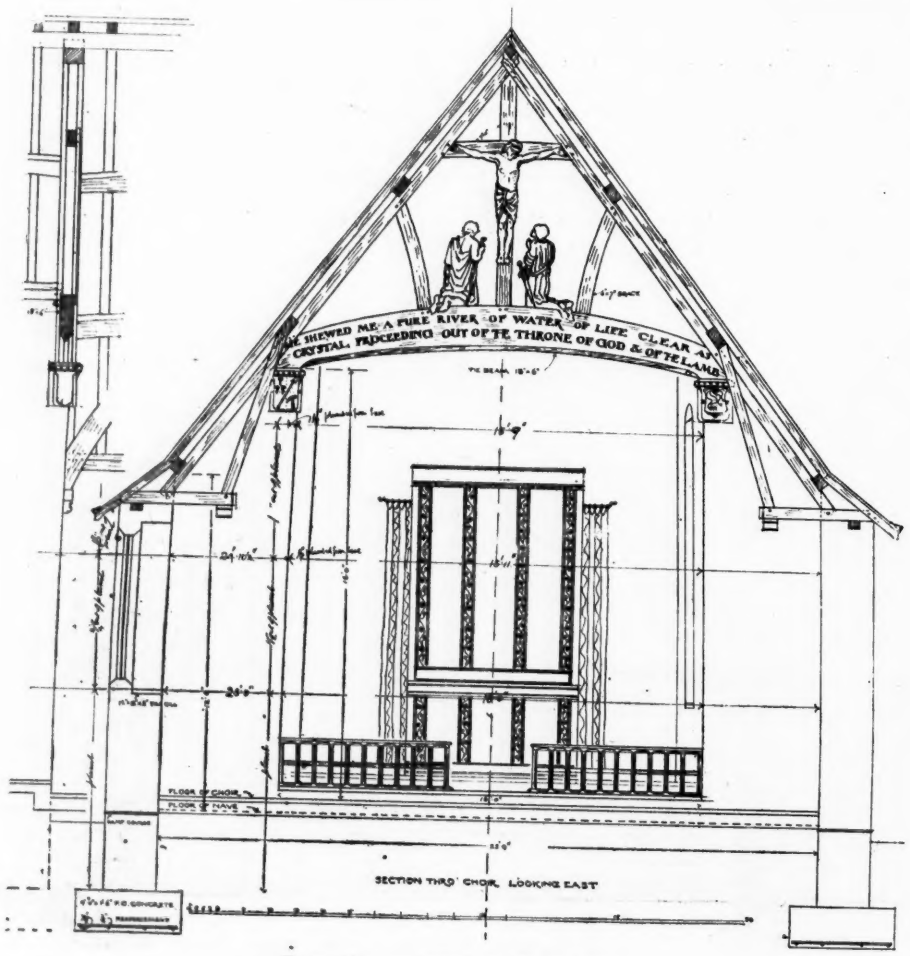
Hall, Wootton Fitzpaine, Charmouth, Dorset.
Mr. F. W. Troup, F.R.I.B.A., Architect.



Westminster Hall Roof.

Measured and Drawn by Messrs. W. Rennie & E. R. Gribble.

needs are too pressing, our time is too short; we have rather to prove ourselves men than that others long since dead were knaves or fools. We can afford to leave the question of whether we are children of the Renaissance, of mediævalism, or of classic civilisation. We cannot recreate the time and the conditions that produced their architecture and their crafts; we cannot recreate our own; our own is the product of theirs. The mistake that many of us make, and which the lesser men of the Renaissance made, is that in studying old work we have been occupied with the form rather than with the spirit. This error is fundamental, and has led to all sorts of theories—theories neglecting, on the one hand, the bases of the crafts—that is, utility, and on the other the "magical and mystical element," the product of the mind, the eye, and the hand in unison. It has led to all sorts of sham revivals of styles and forms without regard to new utilities and to continual intellectual and spiritual growth. There is no great discovery to be made in our calling, unless it is the discovery that we are capable of producing fine work. There is no necessity for originality in its ordinarily accepted sense. That distinguished quality will inevitably arise as we master our craft; yet our instinct will be to express our thought in forms which the eye both by custom and association delight in. This is my point of view with regard to the development of the subject we are considering to-night. Future development is along the old lines; one achieves a happy combination or develops a neglected principle; another catches it up, improves upon it, and hands it back.


HE SHEWED ME A PURE RIVER OF WATER OF LIFE CLEAR AS
CRYSTAL, PROCEEDING OUT OF TE THRONE OF GOD & OF TE LAMB
SECTION THRO' CHOIR, LOOKING EAST

Batts Corner Church, Frensham.

Mr. W. Curtis Green, F.R.I.B.A., Architect.

The history of architecture is very largely the history of roofing; the roof and the chimney are synonymous with home; indeed, if these two features were nowadays rightly arranged the whole aspect of the countryside would be changed. One of the fairest sights of an ancient town or village is that of looking down on it from above. This cannot be said of the mass of buildings now springing up round our towns and villages; the majority of these buildings are a blight on the countryside. All the great buildings of the world have, or had, wonderful roofs; the covering in of a great space was part of the problem their builders solved. The pyramid over the tomb of a Pharaoh was the Egyptian idea of monumental architecture—a mighty covering to their illustrious dead; in the case of the great Pyramid at Gizeh, the greatest and most accurate structure ever built, a roof covering 13 acres of land, Professor Lethaby writes:—"When it was new and sharp it must have gleamed cold and white like the peak of an alp rising above the burning golden sand." The Mausoleum of Theodoric at Ravenna has a domed roof hollowed out of a single stone 36 ft. in diameter, while the great

domes of the Pantheon, Santa Sophia, and St. Peter's, the vaults of Chartres, and the roof of Westminster Hall are wonders for all time. Ancient architecture seems to have had wooden construction as its prototype. The Greeks used timber in their roofs—so far as I can discover, roofs of a single span. The single span roof, that is to say, formed by two rafters pitching against each other, is open to the objection of the outward thrust against the walls on which they rest. The Greeks used purlins in their temples which arrested this tendency. The Greek contribution to woodwork is not a small one. All that is clear-cut and articulate the Greek loved; all that is rough and ungainly he avoided. While influenced by, if not under, the weight of Egyptian precedent, the Greek set out to discover a new realm of art, a royal progress from the mysterious and the obscure to the comprehensible and the definable. This progress lifted the arts on to a new plane. The tendency of the West has been to advance along these lines. This self-imposed intellectual limitation to the finite and the definite is the contribution of the Greek to the modern student. Matthew Arnold has said that, "Though in many respects the ancients are far above us, there is something which we demand that they can never give." The same may be said of other periods as we come to them; it is the key to study and progress.

Roman construction is in many ways near to our own. Viollet-le-duc gives us an idea of Roman construction in his illustration of the roof over the Temple of Fano. This adheres as much as possible to the methods of carpentry indicated in the antique paintings of Pompeii and the bas-reliefs of the column of Trajan. He says:—"The timber framing of the Middle Ages will also afford us great help in our endeavours to become acquainted with the art of carpentry as it existed among the Romans. Of all the processes of building construction, timber framing is certainly that in which traditions were most faithfully preserved; for even in the most barbarious times works in carpentry never ceased to be executed in the West, and as early as the time of Cæsar, the Gauls passed for being very clever in the art of working and framing wood." The roof is shown ceiled with boarding according to Roman custom; it is not a hipped roof, which would have complicated the construction, but terminated with gables of open frame and lattice-work.

Brandon suggests that the absence of examples of open timber roofs during the early period of Gothic architecture may be accounted for by the monopoly in building enjoyed by the Freemasons. He suggests that this body of men, who excelled in the working of stone, despised English oak and discarded it as an inferior material. What is more likely is that they were intent on working out, step by step, the exquisitely beautiful groined vaults, the fireproof curtain as it were, to the roof-covering above. First one and then another consideration swayed the Gothic builders, but one factor was always with them, and that was the roof. In England we were less ambitious than in France; with a few notable exceptions, we were content with far narrower spans to our roofs. In consequence the construction is comparatively simple, far simpler, for instance, than is the case to-day. Owing to rebuilding, to destruction by fire, or to imperfect protection from the weather, there is apparently no open timber roof of the XIIIth century left to us. There is little doubt that roofs of this period were richly coloured with painted patterns. As a rule, where the windows of a church retain any remains of the original stained glass, other parts of the church, such as the roof, have been enriched with colour.

It is convenient roughly to classify open timber roofs as follows:—Roofs with tie-beams; trussed rafter roofs—*i.e.*, single-framed roofs; roofs framed with hammer beams; collar-braced roofs. The sequence is chronological only in origin, for it is impossible to divide history into precise compartments, saying this was done in that century or decade, that in another. There is over-lapping, and the principles having their beginnings in remote history have been rediscovered and reapplied. Moreover, some districts developed one type, others another. Kent, Sussex, and Surrey developed a combination of the trussed rafter, tie-beam, and single purlin. The West Country evolved and perfected a trussed rafter of its own—a beautiful waggon-shaped roof. The Eastern counties are famous for hammer-beam roofs . . . The first man to carry his principles into practice in this question of roofs was, so far as I am aware, Mr. Weir Schultz, the architect of Khartoum Cathedral. He was asked to design a Church hall at Cardiff. The problem was to roof over a considerable area at a minimum of cost and yet to use materials the best of their kind. One of the first considerations in such a case is that of acoustics. The best form of hall for singing or speaking in is one with an open timber roof—such a form, for instance, as that of the Mediæval Hall. It was out of the question to use pit-sawn beams for posts and ties and branches for braces and struts. Fir of the ordinary stock sizes had to be used. It is a clever piece of construction, and I am personally indebted to Mr. Schultz both for leading the way and for lending me his drawings. These he has generously published in the *Builder*.* When my time came to solve a very similar problem in designing an adult school hall at Croydon, with Mr. Schultz's work before me I was able to carry the idea a step further. This hall seats close upon 1,000 people, and costs less than a third of what the ordinary unfurnished church costs. These are the working drawings. There are no rafters in this roof and no flat over the clearstory windows, the tiles sweeping round."

The lecturer showed some examples of various types of roofing, and described the principles of construction. He also showed some interesting examples of the work of Messrs. R. W. Schultz, F. W. Troup,— Gimson, — Box, and others, including some of his own designs.

* See our issue for October 7, 1905.

ARCHITECTURAL SOCIETIES.

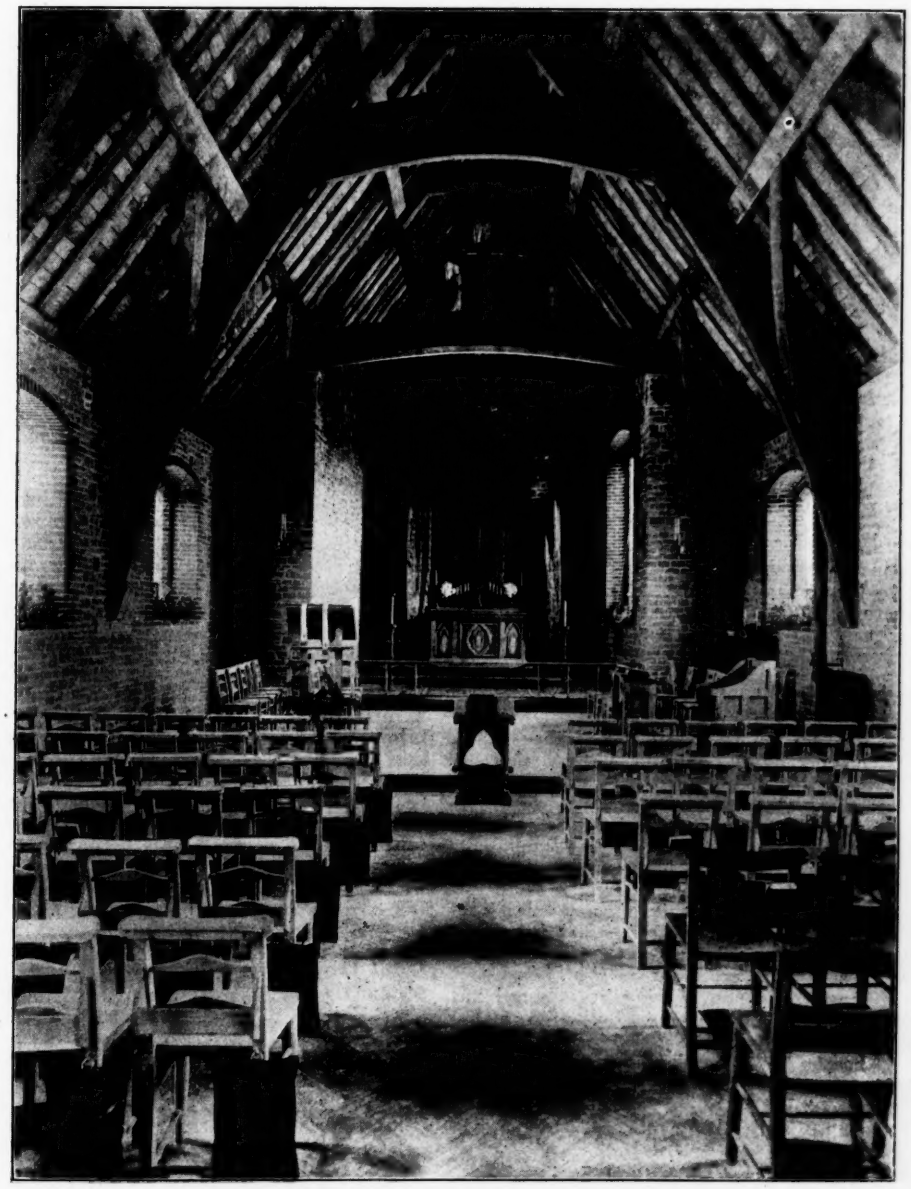
Leeds and Yorkshire Architectural Society.

A general meeting of this Society was held on March 7 at the Leeds Institute, the President, Mr. Sydney D. Kitson, M.A., F.R.I.B.A., in the chair, when a lecture on "The Scottish Renaissance Architecture" was given by Mr. Lawrence Weaver. A series of slides showing plans of houses and castles illustrated the fact that the towers formed their keynote unlike the English plan which developed from the Hall. It was pointed out that the Scottish Renaissance was entirely based on French influence owing to the political connexions between the two countries, whereas in England the influence of Italy and the Netherland was general. The Scotch Renaissance was much later than the English, and the tenacity of the old Baronial style is remarkable. Many fine slides were shown illustrating picturesque exteriors and gardens. Illustrations of interiors included many fine plaster ceilings and painted ceilings, fireplaces, staircases and screens. A vote of thanks was passed on the motion of Mr. G. F. Bowman and seconded by Mr. J. Smith Findlay.

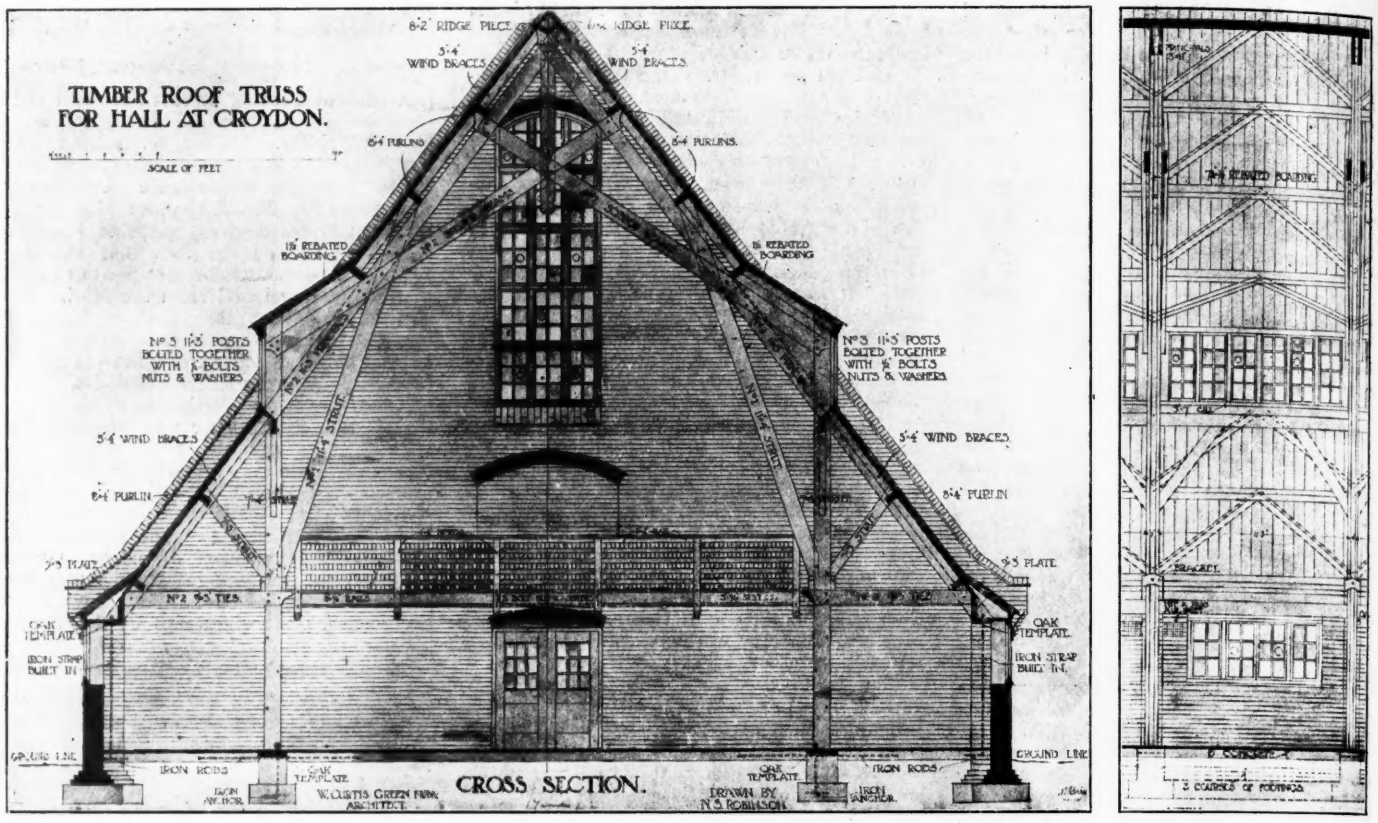
York and Yorkshire Architectural Society.

The following is a *résumé* of a paper on "Sketching" read before this Society on March 13 by Mr. Wm. Whitehead, A.R.I.B.A., Mr. A. B. Burleigh, Lic.R.I.B.A., President, being in the chair:—

"In dealing with the subject of 'Sketching' I speak from my own experience and the educational value of sketching in the training



Church of the Good Shepherd, Frensham.
Mr. W. Curtis Green, F.R.I.B.A., Architect.



Hall at Croydon. *(See previous page.)*

Mr. W. Curtis Green, F.R.I.B.A., Architect.

of fellow students of architecture. To treat the subject methodically I will divide it into the following sections:—The uses of sketching, the mediums and styles, composition, and what to sketch. There are times in everybody's life when they desire to put some of these impressions and ideas into more material form. What is the use of an architect who cannot put on paper his ideas? Something more than mechanical draughtsmanhip is necessary to delineate the very numerous and varied detail of modern times for the guidance of craftsman and workman. To attain this degree of proficiency in the various mediums nothing is more helpful than sketching. Other advantages to be claimed for sketching are familiarity with proportion, detail, and construction and perspective. Like all other accomplishments, there are the early stages of drudgery to be passed before one appreciates the pleasure to be derived. Of mediums the pencil, pen, and water colours are the most suited to architectural sketching. The pencil especially should be mastered and a directness and facility of expression attained. Water-colour sketching is probably the most fascinating of the three. The study of colour alone teaches one so much. The harmony of nature is not appreciated until one's notice is directed in the practice of conveying their impressions to paper. Composition in sketching architectural subjects is as necessary as in landscape and other subjects. Concentration, grouping, and contrast require consideration, but detail should not be sacrificed for effect. Lastly, what to sketch. Everything that is likely to be useful or is interesting. A note-book should always be in one's pocket ready to jot down notes, etc., of any feature or detail which one may see. Whether touring or holiday-making in any form, a sketching outfit should accompany one. Time spent sketching is never wasted, and there is always something to show for it. Many things which come to one's notice would otherwise probably be overlooked."

A large collection of sketches formed an interesting exhibition and illustrated many points in the lecture.

A hearty vote of thanks was given the lecturer, on the proposition of Mr. Geo. Benson, A.R.I.B.A., seconded by Mr. S. Needham, Lic.R.I.B.A.

Nottingham Architectural Society.

The fifth and last meeting of the session in connexion with the Designing Club was held at the Society's rooms on Tuesday, March 12. The President, Mr. Robert Evans, F.R.I.B.A., occupied the chair. Although the subject set by Mr. E. H. Child, A.R.I.B.A., "A Seaside Bungalow," was an attractive one, only four designs were submitted. After the criticism, a general discussion took place, and at the close Mr. Child gave his award as follows:—"Dorian" first, "Tide Time" second, and "Carbon" third.

The President, in proposing a vote of thanks to Mr. Child, remarked that it was not very encouraging to those gentlemen who gave up their time to set designs and examine them when there was such a poor response and poor attendance. At the same time, he congratulated the four competitors on their excellent efforts to fulfil the conditions set, which, in this subject, were by no means easy. As it was their last meeting for the session he also included their best thanks to Mr. Swann, the Hon. Secretary of the Designing Club, for his untiring efforts to make the competitions a success.

During the evening it was announced that an attractive programme was being arranged for the Social on March 26, and that, in addition to the students' work being exhibited, Mr. Arthur Marshall had promised to lend a selection of his own pencil sketches.

Sheffield Society of Architects and Surveyors.

Mr. F. E. P. Edwards, F.R.I.B.A., City Architect, went to Rome last autumn for the International Congress of Architects, and on the 14th inst., at the University, he gave members of the Sheffield Society of Architects and Surveyors a formal report on the Congress, and then went on to give an illustrated lecture on the Italian cities he visited, including fine views of architecture at works in Genoa, Pisa, Florence, Venice, and Milan, as well as of Rome. Speaking of a street improvement scheme in Rome, he said it had been under consideration 300 years—a statement which seems to excuse the slow way in which some Sheffield schemes are dealt with. The Vice-President, Mr. A. F. Watson, F.R.I.B.A., presided.

BOOKS RECEIVED.

ENGINEERING WORK IN PUBLIC BUILDINGS. By R. Owen Allsopp. (London: E. & F. N. Spon. 12s. 6d. net.)

REINFORCED CONCRETE DESIGN. By Faber and Bowie. (London: Edward Arnold. 12s. 6d. net.)

THE LONDON COUNTY COUNCIL.

THE usual weekly meeting of the London County Council was held on Tuesday in the County Hall, Spring-gardens, S.W., Captain G. S. Swinton, Chairman, presiding.

LOANS.—The Finance Committee recommended and it was agreed to make loans to borough councils as follows:—Deptford, 10,000*l.*, for street improvements; Hammersmith, 3,243*l.*, for underground conveniences; Kensington, 5,745*l.*, for street improvement; Poplar, 69,626*l.*, for electricity undertaking; and Stepney, 5,000*l.*, for electricity undertaking.

THE GAIETY RESTAURANT.—The Improvements Committee recommended that the offer of Marconi's Wireless Telegraphic Company, Ltd., of a rent of 6,500*l.* a year for a lease of the restaurant for ninety-nine years be accepted.

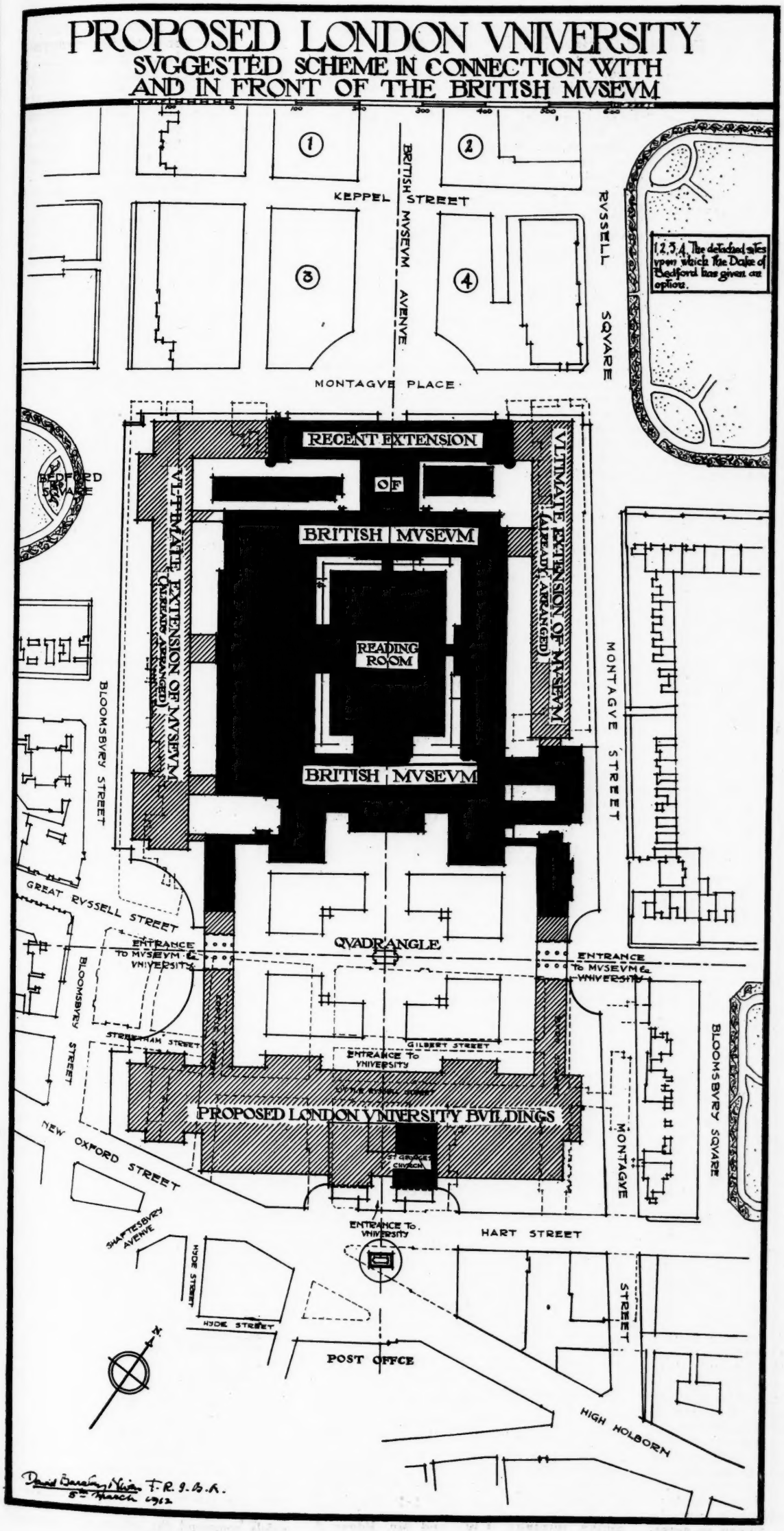
KINGSWAY.—The same Committee also reported that an offer had been received from the London and Northern Estates Company, Ltd., of a rent of 2,050*l.* a year for a lease of ninety-nine years of a site between Lincoln's Inn-fields and Kingsway.

THEATRES, ETC.—The Theatres and Music Halls Committee reported that Messrs. F. Matcham & Co. had submitted drawings showing the proposed alterations to be made at the Amherst Hall, Kingsland High-street, N., and also for proposed alteration and enlargement of the Broadway-gardens Cinematograph Theatre, Walham Green.

The following drawings have been approved by the Committee:—Adelphi Theatre—new dressing-rooms and offices; Queen's Palace of Varieties, High-street, Poplar—construction of a cinematograph enclosure; Royal Academy of Music—arrangement of seating and steppings in the gallery in the concert hall; Royal Assembly Rooms, Woolwich—provision of permanent means of access to the cinematograph enclosure; Royal Horticultural Hall, Vincent-square, Westminster—provision of a substructure to the platform; Wesleyan Methodist Hall, Westminster—arrangement of connexions for the switchboard for the battery circuit for the secondary system of lighting.

THE INSTITUTION OF CIVIL ENGINEERS' EXAMINATIONS.

At the Institution of Civil Engineers' Examinations of last February one of the pupils of Mr. G. P. Knowles, 39, Victoria-street, headed the list and obtained the Bayliss Prize.



PROPOSED LONDON UNIVERSITY.

WE have received the following communication from Mr. David Barclay Niven, F.R.I.B.A. :—

"A proposal has been published whereby buildings for a reconstituted London University are to be erected on four detached sites at the back of the British Museum.

As an alternative, I suggest their erection as one block in front of the Museum, in accordance with the accompanying plan.

In this the island area on which the British Museum stands is enlarged so as to afford ample space for these buildings adjacent to the Museum, with St. George's Church duplicated as a central feature, thus introducing a very delightful note in architectural treatment.

This proposal would bring the University into direct relation with the British Museum. The site is large enough for all needful expansion, and the buildings erected upon it would very properly be the visible expression of the University as a great public institution, and would appeal to the imagination of the people.

With the co-operation of the different authorities this scheme should be realisable, the leasehold tenure of the property affected contributing to its gradual development. The immediate necessity is for a liberal well-considered scheme for University Buildings. A start might very well be made on the area facing New Oxford-street, between Museum-street and Bloomsbury-street, where the leases first fall in.

The modern flats and hotels facing the Museum need not be demolished for many years, until the University buildings are almost complete, although the great quadrangle between the Museum and the University would not have its full significance until then.

The proposed quadrangle would show the buildings surrounding it to great advantage. It is as large as Bloomsbury-square, and should be one of the finest architectural courts in Europe. Through traffic would not be permitted, and the two great entrances, controlled by attendants, would maintain a sense of collegiate repose.

A small open public square might be arranged central with the new buildings, at the juncture of New Oxford-

street, Hart-street, and High Holborn. The land abutting upon this is mostly Crown property, which it should be possible to acquire on favourable terms. This open space would be convenient and would indicate the importance of this educational centre.

The scheme would be a great permanent London improvement, and not only the London authorities, but the nation, might co-operate in its realisation. It would enhance the value and increase the security of the priceless national collections in the British Museum upon which millions of public money have already been expended.

The Duke of Bedford, as freeholder and benefactor of the improvements to the north of the Museum, might also be ready to assist in this great improvement."

GENERAL NEWS.

Professional Announcement.

The address of Mr. Alfred Saxon Snell is now 9, Bentinck-street, Manchester-square, W.

The Architectural Association Athletic Club Smoking Concert.

The concert of the Architectural Association Athletic Club, which was a great success last year, will be held at the Pillar Hall, Victoria Station Restaurant, on Tuesday next, March 26, commencing at eight o'clock. Particulars and tickets may be obtained from Mr. C. G. Boutcher, 40, Great James-street, Bedford-row, W.C., and at the Architectural Association office.

Public Offices (Sites) Bill.

The Public Offices (Sites) Bill, presented by Mr. Wedgwood Benn, seeks to make provision for the acquisition of a site in Westminster for new buildings for the Board of Trade, to acquire land and buildings in St. Andrew, Holborn, for the further extension of the Patent Office, and to acquire land and buildings for use in connexion with the Record Office.

Raw Materials and the Coal Strike.

The Great Northern, Midland, the Great Central, and Great Western Companies will, it is stated, refuse to accept the following materials for carriage:—Sand, gravel, chalk, bricks, roadstone, slag, lime, cement, limestone, stone, round timber, iron ore, pig iron, coke, slates, manure.

The British Museum Site.

A friend of London University has offered, it is stated, a contribution of 100,000*l.* towards the acquisition of the vacant site on the Duke of Bedford's estate north of the British Museum. The donor states that he considers the site the most central and suitable one for the contemplated erection of new headquarters, and holds that the University of London ought to be the chief educational institution of the Empire.

Christchurch Priory.

Christchurch Priory is about to be restored, the Chancellor of the Diocese having granted the petition of the vestry for a faculty authorising the pulling down of the galleries in the transepts, the reflooring and reseating of the church, and the placing of a Holy Table in front of the screen. The work is to be proceeded with as quickly as funds will allow, and a series of plans have been prepared by Mr. T. G. Jackson, R.A., providing for a new raised and screened altar and the repairing of the altar-place with black and white marble. In addition, the flooring of the nave and transepts will be replaced with wooden blocks and the present pews give place to oak seats.

Richmond-hill View.

At a recent meeting of the Surrey County Council at Kingston the question of the making of a cutting from the Surrey bank of the Thames to the Ham lands belonging to the Earl of Dysart, where gravel excavations are being carried on which, it is stated, seriously mar the famous view from Richmond-hill, again came up for discussion. The General Purposes Committee recommended that the County Council agree to the proposal of Lord Dysart to construct a cutting from the river bank through the river lands to a small dock proposed to be formed upon the site of the gravel excavations upon an agreement being entered into by Lord Dysart to contain provisions for the removal of the existing wharf and the covering in of the machinery. Councillor Thompson, of Richmond, moved as an amendment that the recommendation be referred back in order to obtain counsel's opinion as to the legality of the existing wharf on the riverside, which he held had no right to be there. Councillor Humphreys, of Richmond, seconded. Councillor West, Vice-Chairman of the Committee, said the Earl of Dysart had the right, by Act of Parliament, to excavate gravel on this land, and the only point was whether the Council would allow him to do this within certain conditions which would safeguard the amenities of the district. The lesser evil was the better one to adopt. On a show of hands the recommendation was adopted by thirty-five votes to twelve.

Ancient Monuments Bill.

In the House of Commons on Wednesday, in reply to Mr. N. Buxton, Mr. W. Benn (St. George's-in-the-East) said :—"The First Commissioner hopes to introduce the Ancient Monuments Bill next week, when full details will be available for the information of the Hon. Member."—In reply to Mr. King, Mr. W. Benn said he thought the proposal was to introduce the Bill in the House of Lords.

The London Museum.

A valuable collection of views of Old London—gathered by the late Mr. Warwick Wroth, of the British Museum—is exhibited in the London Museum. The collection includes views of many of the old tea-gardens and similar places of resort such as the Dog and Duck, St. George's-fields, South Lambeth (whereof the sign, carved on stone, is preserved in the outer wall of Bethlehem Hospital); Sadler's Wells; the White Conduit House, Pentonville, by Rowlandson, 1787; the Pantheon in Spa-fields, by Humphrey, after a drawing by Edwards, 1772; and Bagnigge Wells, of which the gardens were traversed by the Fleet River, lying near what was Pearl-crescent, and between King's Cross-road and Messrs. William Cubitt & Co.'s stone and building yards in Gray's Inn-road. Mr Theodore Lumley has lent also his collection of rare prints relating to London, and Mr. Frank Corner his specimens of bronzes and pottery-ware. The five models of Old London by Mr. John Thorp which were exhibited at the Franco-British Exhibition, and afterwards at the Festival of Empire, have also been acquired.

International Smoke Abatement Exhibition.

An important exhibition will be opened on Saturday, March 23, at the Agricultural Hall, under the auspices of the Coal Smoke Abatement Society. The exhibition will comprise all the latest appliances for the use of smokeless fuels both in the home and in the factory, and should prove of equal interest to the housewife and to the business man. There will be a large display of gas appliances for cooking, for hot-water supply, for the heating of houses, shops, factories, churches, and other public buildings, and for furnace work. Every afternoon and evening demonstrations of cooking by gas will be given with practical hints in the economising of gas, and in the most effective utilisation of cookers, grillers, hot-plates, etc. Tickets of admission will be supplied by the Gas Light and Coke Company to any of their consumers who will apply at any of their offices. The fogs of London have been largely diminished in intensity of recent years as a consequence of the rapidly extending use of gas for fuel; but much remains to be accomplished before the air of London can rival that of Paris or New York, and it is hoped that this exhibition will do a great deal to stimulate the movement in favour of Smoke Abatement.

COMPETITION NEWS.

Liberal Club, Shanklin.

In the competition for the Liberal Club, Shanklin, the first premiated design is the one submitted by Mr. Gordon L. Thorne, 10, Atherley-road, Southampton. The second and third premiated designs respectively are by Messrs. G. W. Kingswell and C. W. Jolliffe, Shanklin, I.W., and Mr. Edgar J. Harvey, Grove-road, Ventnor, I.W.

Murton Housing Scheme, Durham.

The successful architect in the competition for workmen's dwellings at Murton, promoted by the Easington Rural District Council is Mr. J. J. Dobson.

Oakwood-avenue Council Schools, Warrington.

The following notice has been sent to all its members by the Manchester Society of Architects:—"The promoters refuse to modify the conditions they have sent out, and say that it is not their intention to employ a professional assessor.

I am instructed by the Council to inform you that these conditions are unsatisfactory to the Council; therefore members of this Society must not submit, either directly or indirectly, any designs in the above-mentioned competition."

Some Competitions and the Liverpool Architectural Society.

The Council of this Society requests all members to refrain from competing in the following architectural competitions, the conditions for which are unsatisfactory:—Warrington Schools, Llandudno Police Buildings, and Ormskirk Golf Club Buildings.

CORRESPONDENCE.

A History of Architectural Development.

SIR,—In the notice of the third volume of my "History of Architectural Development," which recently appeared in your paper, it is stated that the work of the time of Louis Quinze is ignored. May I be allowed to point out that such is not the case? Pages 217 to 225 deal almost exclusively with this work, figures 183-4-5 (two photographs and a plan) are illustrations of it, and it is also referred to elsewhere in the volume. I have considerable admiration for the good points of the buildings of the reign of Louis XV., whilst not blind to their defects, and have expressed my appreciation in no uncertain manner in the pages mentioned. F. M. SIMPSON.

Combined Heating and Power Plant.

SIR,—Your note in the current issue summarising Mr. R. J. Durley's paper describing the plant at the Montreal University would lead one to imagine that we cannot show similar examples of economical engineering in this country.

Such is far from being the case, and, though bemoaning our general backwardness in such matters, one could name various cases where our buildings have been dealt with in like manner.

The first I call to mind is in connexion with our South Kensington buildings.

Electricity is generated for the Imperial Institute, Royal College of Science, School of Mines, and the new Post Office, all of which are warmed by exhaust steam from the engines. The steam is carried through a 16-in. main under the roadway.

S. WHITMORE ROBINSON.

Trade Unionism and Restraint of Trade.

SIR,—With reference to my letter in the *Builder* of February 23, I am pleased to note your statement on page 247 of the issue dated the 1st inst., that the trade union does not interfere with the number of bricks which any one of its members might lay in a day. The Secretary of the Institute of Builders confirms your statement in his letter appearing in your issue of the 15th inst.

I stated it was conceivable that on occasion a number of irresponsible bricklayers may have put their heads together and agreed to limit the number of bricks they would lay quite apart from the existence of a trade union, in the same way that on occasion builders have put their heads together and formed a "ring" for the purpose of keeping up prices without reference in any way to their Federation or Institute. Both events operate in restraint of trade, but in neither case is it fair to impeach the respective organisations.

I regret that the Secretary of the Institute of Builders allowed his feelings to impair the tone of his reply to my letter; but in having secured from such high authorities the admission that the trade union does not interfere with the quantity of work a bricklayer may or may not execute in a day's work I may safely commend the information contained in these letters to your readers. X.

EDITORIAL SUMMARY.

In the leading article some observations will be found on the subject of Reinforced Concrete in Architecture.

In "Notes" columns (p. 320) will be found comments on: "Ecclesiastical Metalwork"; "The French Ministry of Fine Arts"; "Architecture and Window-Breaking"; "The East Sussex Hospital Competition"; "The London Museum."

A meeting of the Royal Institute of British Architects was held on Monday, when Mr. W. H. Ward delivered an able lecture and showed many illustrations on "The Architecture of the French Renaissance" (p. 322).

The eighth Carpenters' Hall Lecture of the series on the Arts Connected with Building was delivered by Mr. W. Curtis Green on "Roofs and Roofing." We give an abstract and some illustrations (see p. 323).

"Architectural Societies" (p. 325) include brief reports of the following: "Leeds and Yorkshire Architectural Society"; "York and Yorkshire Architectural Society"; "Nottingham Architectural Society."

An illustrated suggestion in reference to the proposed London University is given on p. 327.

In Correspondence Column (p. 328) will be found letters on: "Trade Unionism and Restraint of Trade"; "Combined Heating and Power Plant"; "A History of Architectural Development."

Some notes on the magazines and reviews of the month are given on this page.

The Monthly Illustrated Engineering Review (p. 331) contains: "Reinforced Concrete in Great Britain"; "The Nile in English Harness"; "The London Opera House"; "Testing of Materials Used in Reinforced Concrete"; and Notes.

The Building Trade Section (p. 338) includes: "Accident Policies"; "Safety Scaffolding"; "Fair Wage Clause, Cardiff"; "Projected New Buildings in the Provinces"; "Applications under the London Building Acts," etc.

The second part of Mr. W. St. John Hope's lecture on "The English House from the Normans to the Tudors" will be found on p. 341.

In Law Reports (p. 344) will be found a brief report of: "Richards *v.* Sanders & Son."

MEETINGS.

FRIDAY, MARCH 22.

Royal Sanitary Institute. — Mr. Henry C. Adams, Assoc.M.Inst.C.E., on "Sewage Disposal." 7 p.m.

Leicester and Leicestershire Society of Architects (Students' Evening).—Introduction to discussion on the R.I.B.A. Report on Reinforced Concrete, by Mr. W. Keay, A.M.Inst.C.E.

Aberdeen Architectural Association.—Mr. A. N. Paterson, M.A., A.R.S.A., on "French Influence on Scottish Architecture." 7.30 p.m.

SATURDAY, MARCH 23.

The Royal Institution.—Professor Sir J. J. Thomson, M.A., LL.D., D.Sc., F.R.S., on "Molecular Physics"—V. 3 p.m.

Edinburgh Architectural Association.—Visits to Usher Hall and new Masonic Hall, George-street.

MONDAY, MARCH 25.

The Architectural Association.—Paper by Mr. C. A. Voysey on "Patriotism in Architecture." 7.30 p.m.

Incorporated Institute of British Decorators.—Dinner at the Trocadero, Piccadilly-circus. 7.30 p.m.

Royal Society of Arts.—Mr. Noel Heaton, B Sc., F.C.S., on "Materials and Methods of Decorative Painting"—II. 8 p.m.

Royal Sanitary Institute. — Mr. Henry C. Adams, Assoc.M.Inst.C E., on "Water Supply, Sources of Supply and Distribution." 7 p.m.

TUESDAY, MARCH 26.

Builders' Clerks' Benevolent Institution. — Annual dinner at the King's Hall, Holborn Restaurant. 6 p.m.

The Institution of Civil Engineers.—Papers on "The Construction of the Glasgow Main Drainage Works," by Mr. W. C. Easton, B.Sc., M.Inst.C.E.; "Glasgow Main Drainage: The Mechanical Equipment of the Western Works and of the Kinning Park Pumping Station," by Mr. D. Home Morton, M.Inst.C.E.; "The Works for the Supply of Water to the City of Birmingham from Mid-Wales," by Messrs. E. L. Mansergh and W. L. Mansergh, MM.Inst.C.E. 8 p.m.

WEDNESDAY, MARCH 27.

Carpenters' Hall, London-wall (Arts Connected with Building).—Mr. Gerald C. Horsley, F.R.I.B.A., on "Influences in the Development of Planning." 7.45 p.m.

Edinburgh Architectural Association.—Mr. D. Hay Flemming, LL.D., F.S.A., on "Two XVIth-Century Contracts for Building the West Port of St. Andrews." 8 p.m.

Royal Sanitary Institute.—Mr. Henry C. Adams, Assoc M.Inst.C.E., on "Scavenging, Disposal of House Refuse." 7 p.m.

THURSDAY, MARCH 28.

Society of Antiquaries.—8.30 p.m.

MAGAZINES AND REVIEWS.

The *Studio* opens with an article on "Turner at Farnley Hall." This mansion on the River Wharfe belonged to Mr. W. R. Fawkes in 1797, when the painter first visited Yorkshire. A close friendship existed subsequently, and the fruits of this association between artist and patron were the series of architectural, topographical, and other water-colours to which reference is now made by Mr. A. J. Finberg. The "Paris Sketches" by Mr. Lester G. Hornby are vigorous semi-architectural studies, and among the "Recent Designs in Domestic Architecture" are examples by Mr. P. Morley Horder, Mr. George Walton, and Miss Ester Claesson, a lady architect of Swedish nationality.

The *Burlington* is an interesting number in which the illustration and reading matter are suitably balanced. The leading position is given to an article, with coloured plate, on the "Rajput Paintings," by Ananda K. Coomaraswamy, which is followed by a contribution by Mr. R. L. Hobson on "British Porcelain in the Trapnell Collection." Mr. A. Bredius has an article in which he gives reason for doubting that Rembrandt painted the portrait of Elizabeth Bas, and the article is accompanied by some fine photographic reproductions. Other contributions include: "A Museum of Oriental Art," by Mr. Lionel Cust; "The Portrait of Ginevra dei Benci by Leonardo da Vinci," by Mr. Herbert Cook, F.S.A.; "Exhibition of Pictures of the Early Venetian School at the Burlington Fine Arts Club," by Mr. Roger Fry, etc.

The illustrations in the *Connoisseur* are chiefly pictorial, with examples of furniture, pomanders, and English plate.

The *Architectural Record* opens with an example of "The Renaissance villa of Italy developed into a complete residential type for use in America," the example being the Harold F. McCormick House on the shore of Lake Michigan, designed by Charles A. Platt, architect, an interesting study in this direction, illustrated by plans and numerous beautiful photographs by Julian Buckly. More generally interesting, perhaps, is an appreciation of the work and personality of "This Most Excellent Master, Baldassare Peruzzi," by M. Stapley, in which full justice is done to his original outlook, his versatility, and his sensitive taste. Photographic views by A. G. Byne show the Palazzo Pollini at Siena, the Palazzo Farnesina at Rome, the Albergati at Bologna, the Casino of the Villa Farnese at Capracola, and the Palazzo Massimo at Rome. This latter has external and internal views, as well as a plan by Mr. Byne of the entrance floor, showing the extremely able manner in which this irregular site was handled. An article by Charles Henry Cheney on the American Academy in Rome is of topical interest. It gives the American point of view towards culture studies. differentiates them from the acquisition of technique, discusses the Ecole des Beaux-Arts in its relation to the subject, and in referring to the value of such a breathing spell in which the artist may "find" himself, points out that its full benefit cannot be derived by those not fully developed in technique. In this direction the British School at Rome may find some difficulties to start with. The article is illustrated by views of the Villa Aurelia, recently bequeathed to the Academy. Part IV. of "Early American Churches," giving views and description of The Ship Meeting House, Hingham, Mass.; St. Peters, New Kent County; and St. Luke's, Smithfield Old Meeting House, Lancaster, Mass., is followed by a "Portfolio of Current Architecture," and by an interesting article on the construction and equipment of the new building for the Curtis Publishing Company of Philadelphia, one of those large buildings full of technical equipment which American architects handle in so fearless a manner.

The *Nineteenth Century and After* is an interesting number, but the article of special interest to our readers is entitled: "Wanted: A Ministry of Fine Arts," by Gertrude Kingston, in which the writer points out that while other countries have their Minister of Fine Arts, England is still without one, though we do not quite follow her in her deduction therefrom that Art has no place in the history of the nation. But the article is in many respects a convincing one, and the views expressed will not be unfamiliar to readers of the *Builder*. In the course of the article the writer says:—

"I question whether the beautiful buildings that I see being destroyed daily in London—the latest to go are the houses in Lincoln's Inn-fields built by Inigo Jones himself—would not have been preserved and repaired in a suitable manner had there been a Ministry of Fine Arts. At present, if they are conserved at all, it is only individual generosity that has to be thanked! It appears to be no part of the programme of the First Commissioner of Works and Public Buildings to take a walk between Piccadilly-circus and Oxford-street, let us say, and note the fine survivals of Old London that are marked down for destruction. The picturesque houses in Carlisle-street, Soho, the historical houses in Lincoln's Inn-fields, the quaint passages between Soho-square and Golden-square, can nothing be done to make them sanitary and fit for habitation, while keeping the original character of the building? Supposing that there were a Ministry of Fine Arts, assuredly there would be a department for the preservation of such landmarks. . . . The argument will be, of course, that the Public Works has no available funds for the preservation of old monuments, yet this is exactly what could not happen if there were a Ministry of Fine Arts. It would have a knowledge of its requirements and a place in the Budget. That all over Great Britain there are magnificent historical manors, mansions, and castles still extant is due to the fact that these have been inhabited by private families. When it is a matter of castles that have belonged at some period of history to the Crown, it is more often the case that they are either in ruins or in a state of dilapidation; Richmond and Middleham and Ludlow may afford beautiful themes to the imaginative painter, but the are national monuments—of decay! The sum total of it all is that but for the individual there would hardly be an ancient edifice left. This we may say also of the pictures, sculpture, and other *objets de vertu*."

All this, of course, was written before the announcement of Mr. Asquith that a Bill will be introduced by the Government to deal with our national monuments, but even then the need for a Minister of Fine Arts will exist.

An article in *Scribner's* by Mr. E. L. Morse on "Samuel F. B. Morse, the Painter," is of considerable interest, as it records a fact, known probably to very few who are familiar with the name of Morse as the inventor of a system of telegraphy still in universal use, that this same Morse was a painter who is counted among the very best American painters of the first half of the XIXth century. He studied in England and was acquainted with Benjamin West, who took a great interest in his young fellow-countryman. With the article are given some illustrations of the work of the artist, which show him to have been a painter of no mean ability, especially as a portrait painter. Morse hoped to be chosen to paint at least one or two of the historical pictures for the panels in the rotunda of the Capitol at Washington, being supported by the National Academy of Design and others. The wish was expressed by John Quincy Adams, ex-President and Member of Congress, to throw the competition open to the artists of all countries, as he alleged that there were no American artists of sufficient ability to paint such great pictures. A caustic reply to Mr. Adams's assertions appeared anonymously in the New York *Evening Post*, and was attributed by him to the facile pen of Morse. The real author proved to be James Fenimore Cooper, but this became known too late, for Morse's name was rejected by the committee. "He never really recovered from this terrible blow to his artistic ambition," says the writer of the article, "he could never speak of it in later years unmoved; it practically ended his

career as an artist. Thus do the fates weave our destinies; what seem to be calamities are often blessings in disguise. Morse, the artist, dropped his discouraged brush and threw himself with all the ardour of his sanguine nature into the perfection of what was then looked upon as the idle dream of a madman; he struggled on through years of hardship and privation, and gave to the world the electric telegraph." In the same issue, an article on "The Armorer and His Art" appears under "The Field of Art," dealing with a loan collection of ancient European armour and arms recently exhibited at New York at the Metropolitan Museum of Art.

Harper's contains nothing of professional interest this month, but the issue is a good one and is fully illustrated.

ILLUSTRATIONS.

Union-Castle Shipping Offices, Southampton.

THE Union-Castle Shipping Company, Southampton, have recently made very large extensions and alterations to their Southampton offices, the work being carried out under the superintendence of the local architects, Messrs. Lemon & Blizard, FF.R.I.B.A. The exterior, which we publish, was built from the designs of the company's London architect, Mr. William Flockhart, F.R.I.B.A., in consultation with Mr. Blizard.

The Villa Madama, Rome.

THE villa was erected about 1516 by Giulio Romano from designs ascribed to Raphael. It was built for Cardinal Giuliano de Medici, afterwards Pope Clement VII., but was never completed.

Partly destroyed by fire in 1527, it subsequently came into the possession of Margaret, daughter of Charles V., from whom it derives its name. It afterwards belonged to the Farnese family, and then to the kings of Naples, who suffered it to fall into complete neglect.

The villa and its gardens at one time formed an important model for the arrangement of the gardens of Italy.

The fresco decorations in the loggia of the unfinished building were executed after 1520 by Giulio Romano and Giovanni da Udine, pupils of Raphael.

Chapel in the Palazzo Riccardi, Florence (Cappella Riccardi).

THE Palazzo Riccardi, now the official seat of the Prefect of Florence, was formerly the Palace of Medici. It was built by Michelozzo Michelozzi about 1430 for Cosimo il Vecchio. The family of the Medici continued to reside there until 1659, when it was sold by Ferdinand II. to the Riccardi family, from whom it took its present name.

The walls of the chapel are decorated with frescoes by Benozzo Gozzoli, executed between the years 1459 and 1463, for Piero "il Gottoso," son and heir of Cosimo il Vecchio.

The chancel, an elevation of which is shown on the plate, contains two groups of adoring angels, while the remaining portions of the walls are covered by the "Procession of the Magi," with its large train of Florentine citizens, servants, and cavaliers. Many of these are contemporary likenesses, and include several of the Medici, also a portrait of Benozzo Gozzoli, the artist.

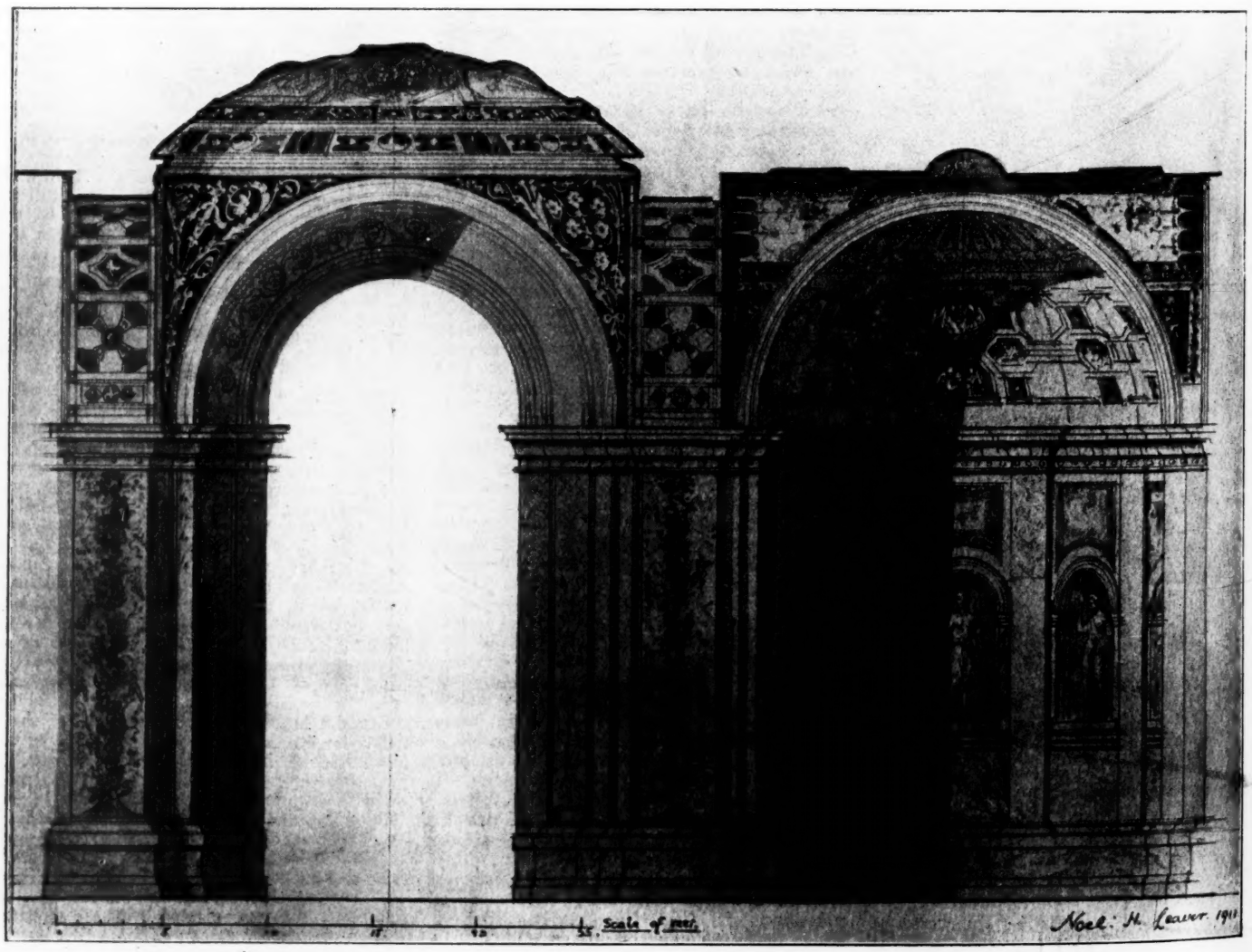
FIFTY YEARS AGO.

From the *Builder* of March 22, 1862.

The Green Park a Monument to the Prince Consort.

IT may be remembered that this land has a gradual slope or inclination from Piccadilly down to St. James's Park. We would divide this slope into so many terraces, with flights of steps descending to each successive level. Here we have at starting and almost ready at hand one grand feature, for it is an admitted fact that nothing has a more stately, impressive, or palatial effect than this mode of laying out ground. It is these flights of steps leading to their terraced temples that impart so much beauty to Indian architecture, and are known there under the appellation of Ghauts. This effect has been well understood since the time of the hanging gardens of Babylon down to those of the Isola Bella. We would devote each of these terraces to the statues or busts—perhaps alternately one of each—to commemorate the peculiar talent of illustrious men. This galaxy of worthies should be confined to England; and there is no want of material for the purpose. By way of hint let us just enumerate the stock upon which we would draw to carry out our purpose: Sovereigns, male or female; legislators and statesmen; poets; military commanders; navigators and naval commanders; dramatic writers and performers; authors, naturalists, artists, sculptors, mathematicians, and astronomers; antiquarians; judges and lawyers; philosophers; scholars and critics; fathers and theologians; prelates and reformers; public benefactors, historians, orators, rhetoricians, and physicians. Now here is a list which might be added to or abstracted from.

At the terminus of the principal vista or avenue of these terraces might be placed the statue or monument of the great object of the whole design, namely, that which is more particularly intended as a commemoration of the late Prince Consort. In the first place it is not necessary that the whole should be completed at one and the same time. The whole of the ground should be laid out, of course, and the terraces completed, most certainly; and the statue commemorative of the departed Prince should also be erected, and pedestals should mark the place for future statues, or busts, as may be. It would doubtless be a pleasing duty each year to add one or more objects towards the completion of the whole; but much might be effected at the present time.



R.I.B.A. Owen Jones Prize.—Awarded to Mr. Noel H. Leaver: Hall of the Villa Madama.

MONTHLY REVIEW · *of* · ENGINEERING.

REINFORCED CONCRETE IN GREAT BRITAIN.—III.

By W. Noble Twelvetrees.

(*Continued from page* 213.)

Systems of Class (a)—*continued.*

CONSIDÈRE SYSTEM.—More than ten years ago M. Armand Considère, of Paris, made a series of investigations into the properties of concrete reinforced by steel in the form of spiral coils, and first communicated his results in the autumn of 1902 to the Académie des Sciences. His interesting investigations and their results have already been discussed at length in Vol. LXXXV. of the *Builder*, to which our readers are referred for details. These and subsequent experiments by M. Considère attracted much attention on the Continent and in the United States, and have suggested various series of tests for the purpose of determining the efficiency of lateral reinforcement in compression members.

After having carried out numerous works in reinforced concrete in France, M. Considère in 1908 established an agency in London for working his patents, under the style of the Considère Construction Company, Ltd., of Westminster.

The British patent granted to M. Considère in 1902 was amended in accordance with the decision of the Chief Examiner to the Patent Office in May, 1911, and in the amended specification the only claim is the following:—

"In constructions of stiffened concrete, the formation of parts under compression in such a way that a core of concrete or the like is surrounded by metallic hooping either external or embedded, formed of independent consecutive closed circular bands, or of helicoidal spirals with or without longitudinally arranged wires or rods."

The specification also states that the invention relates generally to reinforced concrete structures, but is more especially applicable to the construction of buildings, bridges, and arches of wide span.

The chief feature of the Considère system is the introduction of lateral reinforcement as described above into the areas of concrete under compression, to resist the lateral swelling of the concrete, longitudinal bars being added in consequence of practical considerations. The reinforcement consists of ordinary round steel bars and rods, and the spiral transverse reinforcement is coiled on the site of the works by means of a small hand windlass.

Fig. 1 gives details of the most recent arrangement of the reinforcement in Considère system columns and continuous beams. The beam here represented is reinforced by tension and compression bars, vertical web ties or stirrups, tension bars in the upper part of the beam near the supports anchored into the concrete in compression also near the supports, and spiral coils for the reinforcement of the concrete in the last-named place.

It will be noticed that the main tension bars are independent of the armouring over the intermediate supports, which the patentees claim as a decided advantage both from theoretical and practical considerations, and that the web ties are spaced at progressively increasing distances apart from the supports towards the middle of the span as required by theory.

Among the advantages claimed for this system are the following:—

(1) That the resistance and safety of continuous and built-in beams are greatly increased by the addition of spiral coils in the compression areas outside the points of contra-flexure. The patentees also point out that the use of spiral coils in this manner obviates the need for gussets, which may be objectionable architecturally, at the junction of beams and columns.

(2) That the efficiency of spiral reinforcement in columns and struts is from two to three times greater than an equal amount of steel applied in the form of longitudinal bars.

(3) That columns and struts constructed as described are less affected by defects of workmanship in the concrete than similar members constructed in accordance with other systems, and, moreover, they always give adequate notice before final collapse takes place.

Fig. 2 illustrates a new type of column footing patented by M. Considère. The design of conical foundations in this form presents no great difficulty, although the several possible modes of failure have to be carefully considered in designing the profile of the cone and the proportion of reinforcement. The uniform upward reaction of the ground must be resolved at various points into a horizontal component, and also an oblique component acting in the direction of the generatrix of the cone. The first of these components represents a bursting force against which resistance is furnished by circumferential reinforcement, while the other component results in compressive stress, for which provision must be made by an adequate thickness of material. Another contingency is that the column may shear a hole through the roof of the cone. This possibility governs the depth and the amount of reinforcement at the crown. It is claimed that conical foundations of the type described result in great economy, particularly for heavy column loads on ground where only a low pressure per square foot can be safely permitted.

The business of the Considère Company is wholly confined to the design of structures in reinforced concrete, embodying only plain round bars of mild steel of the ordinary commercial sizes. Contractors are not supplied by the company with any material, and any firms of good standing and repute are free to tender for works in accordance with the Considère system on the quantities prepared by the company. All fees and patent royalties in connexion with the preparation of designs are included by the contractor in his tender, and the company are always ready to take full responsibility for all works designed by them.

Piketty System.—M. Paul Piketty, of Paris, having been engaged for about twelve years in the construction of reinforced concrete structures in France, has recently opened a branch in London under the style of Paul Piketty & Co., at 14, Bloomsbury-street, W.C.

The Piketty system of reinforcement for beams and slabs somewhat resembles that of M. Hennebique, and in certain respects is similar to that of M. Coignet.

The steel employed is in the form of round bars for resistance to tension and compression, and of thin rods bent into U-shaped loops for resistance to web stresses.

Fig. 1 contains three part longitudinal sections representing the arrangement of the reinforcement in beams with the ends built into a wall. The main tension reinforcement consists of two or more bars, of which one in each group is always bent up towards the ends, and, as shown in the bottom section, other bars may be similarly treated. The ends of the bars are either fish-tailed or fish-tailed and bent to J-form for security of anchorage. One or more bars are always inserted in the compression area of beams for the following reasons:—(1) For increasing compressive resistance; (2) for resistance to secondary tensile stress due to permanent deformation of the concrete; (3) to provide to fastening the upper end of the web loops or stirrups.

The latter are placed at varying angles, which increase progressively until at the middle of the beam the stirrups are vertical. The upper ends of each stirrup are bent over the compression bars at right angles, as represented in the drawings. Importance is attached to the horizontal projection of the ends of the stirrups into the slabs connected with beams,

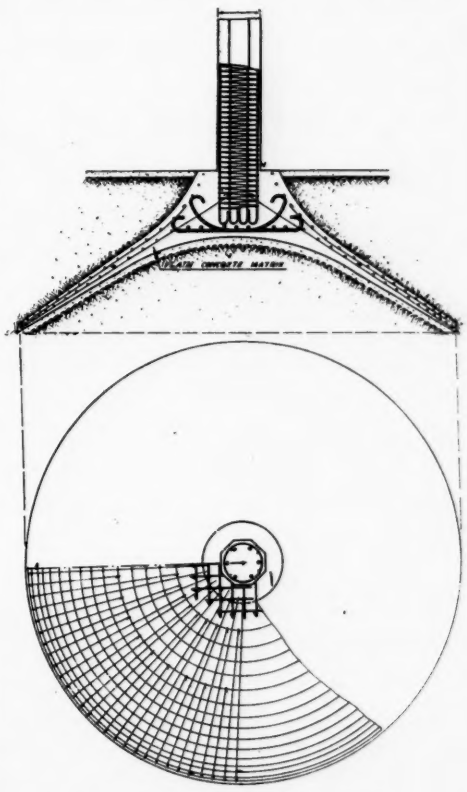


Fig. 2.—Considère System: New Type of Column Footing.

an arrangement offering efficient resistance to the shearing and tensile stresses along the longitudinal connexion.

Slabs are reinforced by two series of rods, those in one series being horizontal throughout, and those in the other series being bent up so as to pass over the compression reinforcement in all supporting beams.

Fig. 2 illustrates the arrangement of the reinforcement in continuous beams and slabs, also showing details at the connexion between a column and the component parts of a floor system. It will be noted in the drawing here given that the floor slab is reinforced in two directions at right angles to one another.

Fig. 3 includes two cross-sections of heavy beams with compression reinforcement rendered essential by the stresses to be resisted, the topmost bars incidentally serving for the attachment of the stirrups. Over the tension reinforcement will be noticed short bars intended for the uniform distribution of the stress, and fulfilling the same purpose as the analogous bars in the Coignet system. It should be noticed that the compression reinforcement is surrounded by encircling bars serving the two-fold purpose of linking the bars together and of increasing the compressive resistance of the concrete by restraining its expansion.

Columns in the Piketty system may be square, polygonal, or circular in cross-section. The reinforcement consists of longitudinal bars braced at intervals by transverse ties, each composed of a steel rod bent around each longitudinal bar, and the ends turned inwards so as to be embedded in the concrete core of the

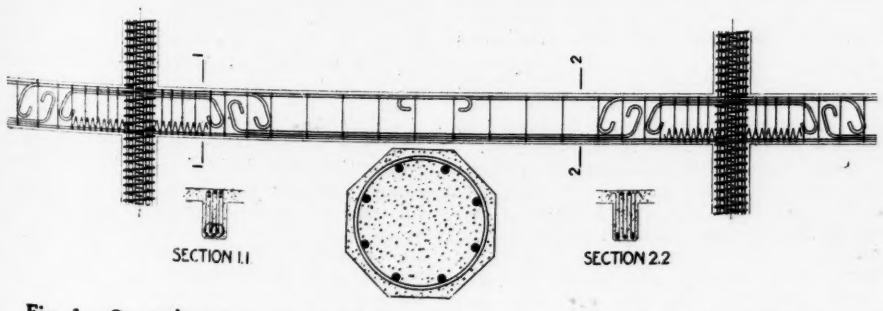


Fig. 1.—Considère System: Reinforcement in Columns and Continuous Beams.

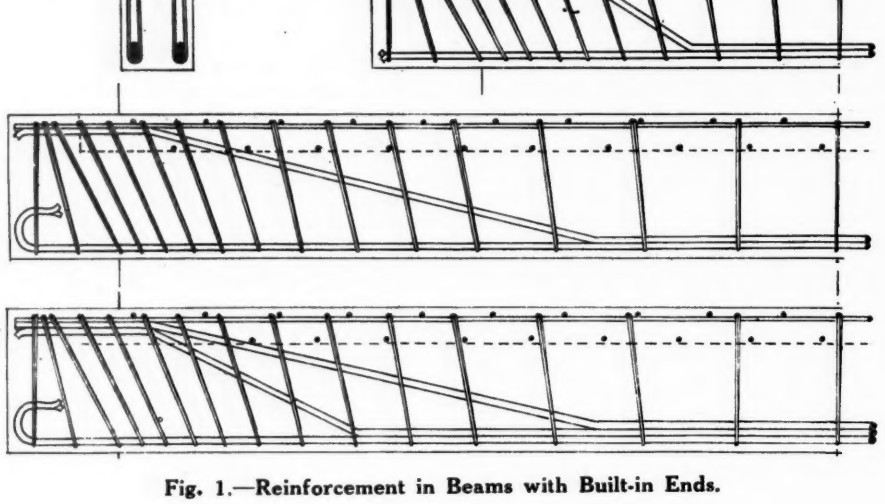


Fig. 1.—Reinforcement in Beams with Built-in Ends.

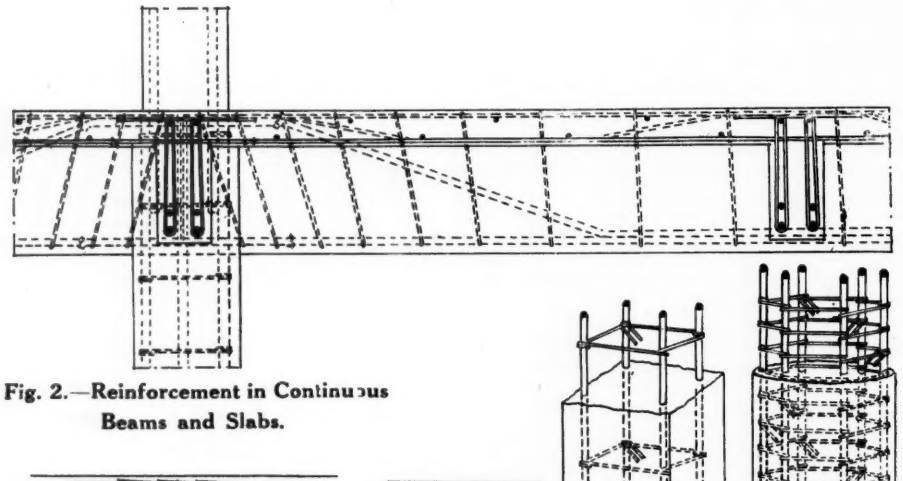


Fig. 2.—Reinforcement in Continuous Beams and Slabs.

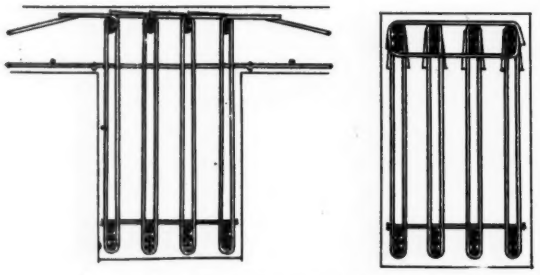


Fig. 3.—Sections of Heavy Beams.

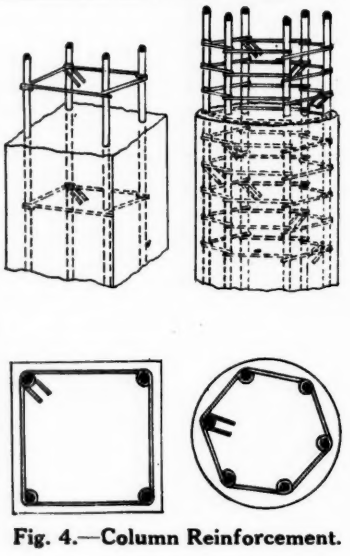


Fig. 4.—Column Reinforcement.

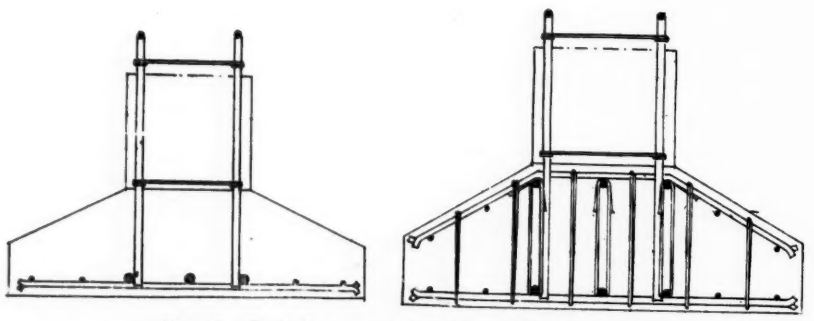


Fig. 5.—Reinforcement in Column Footings.

ILLUSTRATIONS OF PIKETTY SYSTEM.

column. Fig. 4 illustrates two arrangements of this simple method of column reinforcement.

Column bases in the system are reinforced either by a network of tension bars laid near the lower surface of the concrete, or of both tension and compression bars and vertical stirrups, as shown in Fig. 5.

The chief advantages claimed for the Piketty system may be thus briefly summarised :—

(1) That the sloping portions of the upward bent bars in beams furnish the greater part of the resistance needed against stresses due to negative bending moments near the supports of built-in and continuous beams, the remaining resistance being afforded by the upper straight bars around which the ends of the stirrups are turned.

(2) That the angular disposition of the stirrups, varied according to calculation in every case, is one offering the most effective resistance to tension on diagonal planes in the concrete.

(3) That the transverse ties in column reinforcement have the effect of bracing the longitudinal bars in their correct positions and of raising the ultimate strength by preventing the swelling of the concrete under compression.

Messrs. Paul Piketty are willing to give advice to architects, engineers, surveyors, and to their licensed contractors. Contractors for this system of construction are selected from old-established and experienced builders and contractors having reputation for excellence of workmanship, and the firm hold themselves personally responsible for all designs issued from their office.

THE NILE IN ENGLISH HARNESS.*

A COMMON device on the pedestals of the statues of ancient Egypt, more than 3,000 years old, depicts "The Binding of the Two Lands" of the papyrus and the lotus, of the Upper and Lower Nile. It is evidence to show that during the time of the Pharaohs it was recognised, as is done to-day, that whoever is responsible for the welfare of Egypt must control the Nile from its sources to the sea.

The ancient Egyptians appear to have supposed that the source of the Nile was in a cave of the granite islands above the first cataract at Assuan. But information is more exact now. The sources of the Nile are two-fold, viz., the mountains of Abyssinia and the great lakes at the Equator. The rain which falls in the Monsoon months in Abyssinia produces flood discharges in the Blue Nile, Atbara, and Saubat Rivers, and these uniting cause the flood in Egypt. When these floods subside the steady flow of the Nile in summer is maintained by the water that flows out of the Equatorial lakes into the White Nile.

In 1882 the battle of Tel-el-Kebir was fought, and the British occupation of Egypt began. In 1883 the care of the irrigation was entrusted to Sir Colin Scott-Moncrieff, who obtained four irrigation engineers from India to assist him. They found the "Corvée" or official system of unpaid labour established in the country, and one of the beneficial effects of their activity was the abolition of this form of organised slavery and the substitution of paid voluntary labour for it.

The most important part of their work was in Lower Egypt, the Delta, where Mehemet Ali had, during the XIXth century, introduced cotton cultivation, necessitating irrigation all the year round instead of a single inundation during flood-time—the ancient system under which corn and cereals were grown. An attempt was made to obtain water by digging canals deep enough to draw in water from the Nile when at its low summer level; but the Corvée was not able to keep these canals clear to the requisite depth, so a river regulator was designed to raise the water level of the river sufficiently to cause a flow into the distributing canals.

The Delta Barrage.

This work is now known as the Delta Barrage. It was designed and built by a Frenchman, Mougel Bey. It consists of two fine regulators, one across the head of each branch of the river just below the point where it divides into the Damietta and Rosetta branches. Each regulator has sixty-one bays with sliding gates for regulating the river levels and discharges. It was designed to hold up 13 ft. head of water. But the foundation layer of concrete had been recklessly laid in running water and the mortar had been washed away, so that the bottom layer of the foundation platform was nothing but loose concrete metal with no binding material to make it water-tight. Consequently, after the superstructure was complete, and an attempt was made by closing the openings to hold the water up, a flow through the bottom layer was produced which displaced the sand on which the whole rested, and cracks and subsidences appeared in the superstructure of a most ominous description. The closure of the openings was therefore removed and the pressure taken off to save the work from destruction. It failed to perform the work it was designed for, and henceforth, till the British occupation, was of use only as a bridge for traffic.

In 1884 the barrage was taken in hand by the new Anglo-Indian engineers. After preliminary examination and experiments its restoration was decided on. A new floor of sound masonry was built over the old one, all springs and leaks and defects being scientifically and thoroughly treated. The new over-lying floor was then prolonged up-stream and down-stream so as to form aprons

* Abstract of a lecture by Sir Hanbury Brown, delivered at Carpenters' Hall, London-wall, on February 15.

of sound construction. The old defective foundation platform was thus covered over and enveloped with a sound exterior floor, cutting it off from communication with the river. This work being completed, the barrage held up 13 ft. head of water, as it was designed to do.

Cement-Grouting the Foundations.

But still there was left untouched the defective bottom layer of the old platform. If this in addition could be compacted together, the structure would be still further secure. So bore-holes were jumped from the roadway in the centre of the masonry of the piers 57 ft. downwards into the sand-bed of the river underlying the foundations. Five bores were made in the length of each pier. When a bore was found to be clear, neat cement-grout, *i.e.*, cement and water only, was poured down the bore, and the pouring continued till the bore was full to roadway level. The pressure exerted at the bottom of the bore by the liquid column of cement-grout was 2¼ tons per square foot, sufficient to force the grout into all unoccupied spaces in connexion with the bore at any point. Evidence of the travel and setting of the cement under the foundations was obtained when clearing bores not yet grouted. Altogether on the two barrages an aggregate of 7¾ miles of bore was made and over 6,000 barrels of cement poured down them.

Subsidiary Weirs of the Delta Barrage.

But, though, after this operation, the barrage was worthy of more confidence, the direct evidence of the defects in the original foundations obtained by the boring tools produced such an effect on the minds of those responsible for the irrigation that it was decided to build subsidiary weirs downstream of the two barrages to pond up the water, and relieve the old work of some of the duty imposed upon it. The weirs were accordingly designed to hold up 10 ft., and the barrage was to hold up 10 ft. more, so that, while the head on the barrage was reduced from 13 ft. to 10 ft., the total heading up was increased from 13 ft. to 20 ft., giving an increased control over the river at the same time as greater security.

The method of construction of the weirs affords a remarkable instance of the employment of cement-grout for subaqueous work. The main wall of the weir went down to 20 ft. below lowest water level; the footing wall, 10 ft. deep, was also below low water level, as well as the greater part of the weir filling. On account of anticipated trouble with springs, it was decided to build these weirs without any unwatering of the foundation area. The river bed was first dredged out to the foundation levels of the weir all over, and the main wall and footing wall were then got in by forming a succession of blocks under water by the employment of cement-grout. The blocks were formed by the help of a raft made of two large barges with a travelling gantry spanning the interval between them, Below the gantry and between the barges a four-sided box was formed, the bottom of the box being the dredged bed of the river. The box was 30 ft. by 10 ft. by 20 ft. to 25 ft. deep. Four perforated pipes were fixed along its axis, and the box was then filled to water level by throwing in rubble stone of all sizes. Cement-grout was then poured into unperforated pipes introduced into the perforated pipes, and the pouring continued till the water in the box had been displaced and the grout had risen to the level of the water outside the box. The inner pipes were then withdrawn and the box and contents left undisturbed till next morning. It was then found that the cement had set sufficiently to hold the block together, and the box frames were eased off, the sides dismantled, and the apparatus moved forward, less one end, to form a three-sided box, with the block formed serving in place of the end removed. A second block was then made joining on to the first, a third on to the second, and so on, till a continuous wall had been made right across the river. The clay and rubble filling, provided in the design, were then deposited under water, and the remainder above water level built in the ordinary way.

Exhaustion of Natural Supply.

The old Delta Barrage having been consolidated by adding new floors and aprons, and by cement-grouting its defective foundations, and having been relieved and its effectiveness increased by the subsidiary weirs, such a command over the river had been obtained that every drop of the natural discharge of the river in summer was utilised in the irrigation of the cotton crop, and there was a demand for more.

It became therefore necessary to store some of the river's surplus of the flood and winter seasons to supplement the summer's supply. After careful study the project which involved the construction of the Assuan Dam was decided on as the best of the alternative schemes put forward.

The Assuan Dam is built on the crest of the First Cataract where the river flows over a bed of granite.

Dam Site.

During flood the river flows over the cataract as an unbroken sheet; but when the flood subsides the granite emerges above water level and the river divides itself into five separate channels. The construction of the dam along the length above water presented no engineering difficulty. It was at the five channels, running deep and with high velocity, that the engineer's skill and resource were brought into play. The method of enclosing and laying dry the area within which the permanent dam was to be built was the following.

Temporary Dams to Close Channels.

Temporary dams were made upstream and down-stream of the foundation site. The down-stream dam was first made of large stone to check the rush of water. The upstream dam was then made, also of stone, still further checking the flow. The upstream slope of this dam was then staunched by small stone, sandbags, and sand till it was practically water-tight. The water between the temporary dams then fell to the level of the water down-stream of the lower dam. This dam was then staunched on its outer face till it, too, was water-tight. The water enclosed between the dams was then pumped out and the site of the work laid dry.

This may sound simple. But in several cases the making of these temporary dams was a formidable undertaking, stones up to 12 tons in weight being used. The Bab-el-Soghair—or little gate—had a depth of 28 ft. of rushing water. As the closing dam advanced its roaring torrent increased in violence and resisted all efforts to master it. The heaviest stone and stone encased in wire-netting was thrown in, and for a week no progress was made. The Nile demanded a sacrifice. So two heavy railway trucks were filled with stone in wire-netting, each truck with its stone weighing 25 tons. Wire ropes were passed under the trucks and over the stones, and the two trucks were bound together with wire ropes. A locomotive with steam up behind the trucks then put on full steam ahead, and shot the whole 50 tons bodily into the roaring water. This settled the business. The trucks stopped where they landed, and formed a footing for the stone which was then thrown in to complete the dam.

Excavating Foundation Bed.

The foundation area having been made accessible, the first operation was to clear away the unsound granite by pick or blasting, till a sound granite bed had been reached all over. The building of the dam of uncoursed granite rubble in cement-mortar was then taken in hand.

Details of Dam.

The dam is 1¼ miles long, it has now (after raising) a greatest height from foundation bed of 143 ft., and will ultimately support a maximum head of 90 ft. The ultimate capacity of the reservoir formed above the dam will be 2,300 million cubic metres (about 506,000,000,000 gallons, or half a million million gallons). It will have cost about 4,200,000*l*. During construction there was a population of 15,000 connected with the work. The maximum shade temperature was 120 deg.

Design of Dam.

The dam passes the whole river discharge through 180 sluices, and has no waste weir or overflow. This particular form of dam was adopted to avoid the tendency of the river to deposit its silt if its velocity of flow were to be checked during flood by material heading up at the dam.

Philæ.

The submersion of Philæ and its picturesque group of ruins is the one deplorable result of the creation of this fine reservoir, but, compared with the benefits resulting to Egypt from the construction of the Assuan Dam, the loss of beauty that the face of Philæ has suffered cannot be counted as unmitigated.

The lecture was illustrated throughout by interesting lantern slides.

THE LONDON OPERA HOUSE.—II.

Steel Construction.

THE whole of the steelwork in the new building was constructed by Messrs. Richard Moreland & Son, under the direction of the consulting engineer, Mr. A. T. Walmisley, M.Inst.C.E., of Westminster.

In order to convey an intelligible idea of the steelwork without unnecessary words we will state the nature of the construction on the different floor levels of the building:—

Stall Plan.—The only steelwork is represented by stanchions behind the stalls for the support of floor girders in the part of the building containing saloons and other accomdation for the public, and for the support of the circle and gallery girders.

Box Tier Plan.—Behind the stage one bay of flooring is carried by steel beams; in the auditorium the steel framing of the box tier is suspended from the floor above; and behind the auditorium steel is extensively used in floor framing.

Circle Plan.—Behind the stage steel framing occurs on the main and mezzanine floors; the circle framework and floor beams behind being also of steel.

Lower Gallery Plan.—In addition to floor girders and joists behind the stage, two 60 ft. span trusses carry the flies on either side of the stage, which is closed at this level by the proscenium girder, 49 ft. long; the gallery and upper boxes, as well as the floors behind the auditorium, are carried by steel framing.

Upper Gallery Plan.—The only steelwork is that of the gallery and a narrow strip of floor behind.

Roof Plan.—Behind the stage the roof frame is of the same design as for a floor; over the stage the roofing is supported by four large trusses carried by two trussed girders; the auditorium roof is carried by a series of six trussed girders extending from side to side of the building; and the flat roof over the part behind the auditorium has steel framing akin to that of a floor.

Although the whole of the steelwork was designed and executed in accordance with the most recent practice, much of it is necessarily of most familiar character. Therefore, in the subjoined notes we give particulars only of the more important details of construction.

The stanchions receiving the enormous loads transmitted by the circle and gallery girders are based on special steel grillages embedded in concrete, the largest of these being 7 ft. square in plan.

The steelwork for the thirteen boxes in the main tier at entrance level is suspended from the main girder of the circle above and the six boxes at the sides are hung from wing girders. The radial floor girders, consisting of 8-in. by 5-in. I-beams, are inclined at the required slope and connected by circular rows of 8-in. by 5-in. beams, and 4-in. by 3-in. joists, the system being completed by 7-in. by 4-in. joists in the outer ring as shown. Each main joist is provided with three slings for attachment to the floor above, the slings being concealed in the partitions between the boxes. The reason for suspending the circle was to avoid obstruction at stall level, where the only columns are two at the sides quite out of the way of the audience. By suspending the box tier as described the load on the grand circle steelwork was greatly increased, and, in consequence, the main girder of the circle tier is of unusual proportions, and is said to be far larger than any member of the kind hitherto employed in theatre construction.

Fig. 1 is a half plan of the grand circle framing. The circle is carried by sixteen raking cantilevers built up of angles, plates, and I-beams. As may be seen by the drawing, fourteen of these cantilevers are fixed into the walls at one end, extending across the main girder to the front of the circle, and two of them start at the main girder, the framework being completed by five raking beams between the main girder and another transverse girder, 22 in. deep by 9 in. wide, at the back of the auditorium. This girder is supported by six stanchions. Steel

THE BUILDING TRADE.

ACCIDENT POLICIES.

THE case of Allen *v.* London Guarantee and Accident Company, Ltd., recently heard in the King's Bench Division, is of considerable importance to those insured against accidents. The plaintiff, a builder, was insured under what is known as a third party policy—that is to say, against claims by third persons from accidents caused by the plaintiff's servants. An accident occurred, caused by a cart driven by one of the plaintiff's servants, and two men were injured, who both instituted proceedings against the plaintiff to recover damages for the personal injuries which they had sustained.

Under the policy the plaintiff was insured "whenever the insured or a paid and duly authorised driver in the regular employment of the insured was in charge of any horse or horse-drawn vehicle, and injury or damage was caused by such horse or vehicle. . . ." But the policy also contained clauses to the effect that the total aggregate liability of the company was to be limited to the sum of 300*l.* for all claims to compensation and costs, charges, and expenses paid either to the assured or any claimant in respect of any one accident or occurrence, and the company was enabled either to pay down the maximum sum in respect of such liability or at the election of the insured to defend any action, in which case all costs and expenses occasioned by the defence were to be borne by the insured.

The jury awarded 200*l.* to one injured person and 175*l.* to the other, and the legal costs of these persons amounted to 218*l.*

The questions raised in the case were—(1) Whether there was one accident under the policy so that the liability of the company was limited to 300*l.*, or whether the insured was liable for the extra 75*l.* (2) Whether the insured could recover the 218*l.* costs from the company. The Court held that there were two accidents, but only one occurrence, and that the limit on the liability of the company therefore applied. As regards this point, in 1891, the Court of Appeal in South Staffordshire Tramways Company, Ltd. *v.* The Sickness and Accident Assurance Association, Ltd., held that where the overturning of a vehicle had injured several persons there was more than one accident under a policy where the insurance was against "accidents by vehicles," but a limit was expressed to "one accident." The policy we are considering was, however, especially worded with a view to exclude that decision, and the Court has held that that object was attained.

As regards the second point, the Court held that, as the company had defended the actions on its own initiative without the consent of the assured, they were liable to pay the costs incurred by the third parties.

The Insurance Company had not pressed their counterclaim for the extra 75*l.*, so in the result the plaintiff succeeded, but this case illustrates the necessity for careful consideration of the terms of insurance policies—a point which we are always impressing upon our readers.

SAFETY SCAFFOLDING FOR STEEL-FRAME BUILDINGS.

IN an article published on March 10, 1911, we described various improved types of scaffolding for steel-frame buildings, including one devised by the Patent Scaffolding Company, of New York. There is nothing particularly new in the underlying principle, as the scaffolding is merely a development of the well-known painter's boat. However, the manner in which this form of scaffolding has been evolved from a rudimentary appliance is quite ingenious and deserving of commendation. The two illustrations now produced will enable our readers to realise the convenience of the apparatus to builders, and the security it affords to bricklayers and labourers.

Fig. 1 represents the construction of curtain walls at two different levels by the aid of suspended scaffolding, and Fig. 2 is a view along the latter, showing the working platform, guard ropes, and winches used for adjusting the height of the platform. The scaffold is formed of sections, each 10 ft. long, suspended by wire ropes bolted at the top to outriggers, and secured at the bottom to a pair of hand winches. To the drum of each winch, ratchet wheels are fitted, these being actuated by a lever enabling the men to raise or lower the section of scaffolding as required. Thus the scaffold is virtually equivalent to a connected series of painter's boats, forming a continuous working platform, providing ample space and conducing to safety and economical construction.

THE FAIR WAGE CLAUSE, CARDIFF.

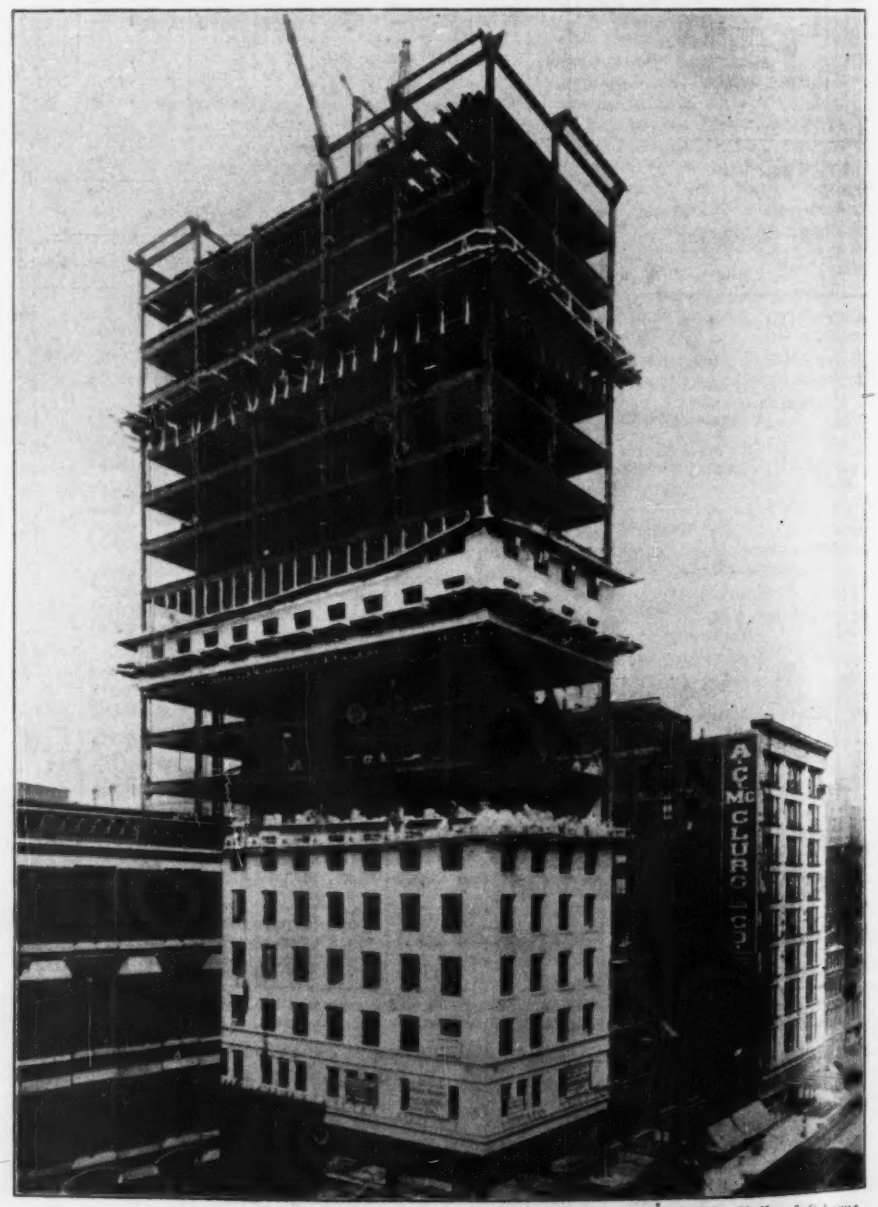
A DEPUTATION of the Cardiff Master Builders' Association waited upon the Cardiff Public Works Committee recently to protest against the new fair wage clause in Corporation contracts proposed by the Cardiff Trades and Labour Council. The deputation was headed by Mr. J. Gibson, the President of the Association, the other members of the deputation being Messrs. J. E. Turner, William Thomas, T. Price, and Isaac Watkins, the Secretary.

The deputation contended that the proposed alterations were unreasonable and unnecessary, and that there existed at present ample machinery for settling any grievances that might exist as between the master builders and their employees.

Mr. Gibson, who was the first speaker, dwelt upon the first clause, which stipulates that the contractor shall employ only *bonâ-fide* trade unionists for the purpose of executing the works contracted for. This clause, declared Mr. Gibson, was tantamount to asking the master builders to become agents for trade unions, to which they strongly objected. The proposed alterations were unnecessary and unjust.

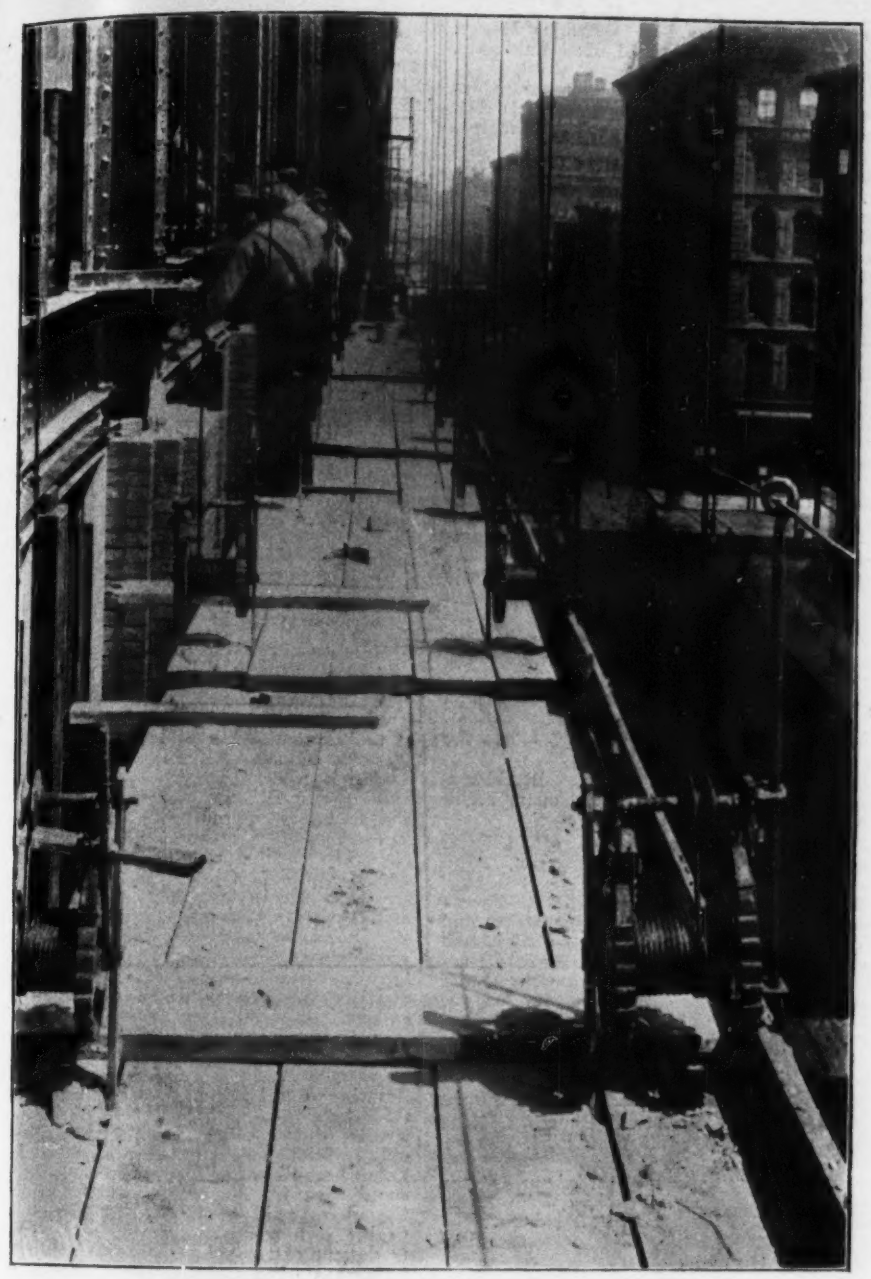
Mr. William Thomas said that they as builders strongly objected to be made a machine for the purpose of increasing the number of trade unionists, and he did not think that any contractor of any standing would accept a contract under such conditions. There was already in existence a Board of Conciliation set up for South Wales and the West of England, and also a National Board, to deal with disputes, and he could not recall a single case where an amicable agreement had not been arrived at by one or other of the Boards since their establishment in 1905.

Mr. J. E. Turner said that the ground upon which the master builders took their stand was that (1) the present clause in the contract agreements met all reasonable requirements; (2) the inspection of the employers' books was altogether unnecessary; (3) that the stipulation that notices of wages should be posted up was also unnecessary; and (4) that to allow the recognised trade union to be the sole arbitrator in cases of dispute was totally unreasonable. The deputation further informed the Committee that new regulations governing



[*Photo. by Fuller & Osborne.*

Fig. 1. Patent Safety Scaffolding.



[Photo. by Fuller & Osborne.

Fig. 2. Patent Safety Scaffolding.

wages and conditions of employment would come into operation in May.

Having thanked the Committee for hearing their objections, the deputation withdrew, and the matter was referred to a sub-committee for consideration and report at the proper time.

GENERAL BUILDING NEWS.

NEW CHURCH, ROTHERHAM.

Mr. James Totty, of Rotherham, is the architect for this church which has been erected in Gerard-road at a cost of about 3,675*l*. The building is in the Gothic style, and provides accommodation for over 500 persons.

NEW BUILDINGS IN LONDON.

Developing estate, Putney-hill, S.W.; Messrs. E. Parry & Co., contractors, Howard's-lane, Putney, S.W. Proposed building for East Putney High School, Putney-hill, S.W.; Putney Public Day School Trust, Ltd. Extension to Isolation Hospital (3,000*l*.), Barnet, N.: Mr. Pill, architect, of Messrs. White, Son, & Pill, 13, High-street, Barnet, N. Public laundry, Kensal-road, Paddington, W. (2,200*l*.): Mr. E. B. B. Newton, Surveyor, Town Hall, Paddington, W.

NEW HOTEL, BLACKPOOL.

A new building, to be called the York and Lancaster Hotel, is to be erected on the Pembroke Estate, Claremont Park, and is expected to cost about a quarter of a million sterling. The architects for the work are Messrs. Charles Clegg & Son, of Spring-gardens, Manchester.

TRADE NEWS.

Messrs. Jno. Birch & Co., Ltd., of 2, London Wall-buildings, London Wall, E.C., have recently secured the order for materials in connexion with a new drainage scheme for the City of Fortaleza, Ceará, Brazil. The order includes some 16,000 tons of cast-iron pipes and about 4,000 tons of stoneware pipes, together with the requisite valves, sluice gates, and accessories. The value of the contract is, approximately, 160,000*l*.

Under the direction of Mr. Harold R. Hooper, architect, Ipswich, Boyle's latest patent "air-pump" ventilators have been applied to the theatre, Harwich.

The additions to the Farnham Workhouse are being supplied with Shorland's patent Manchester grates, by Messrs. E. H. Shorland & Brother, Ltd., of Failsworth, Manchester.

We are informed that Messrs. Stephens & Carter, of Paddington Green, ladder and barrow makers and scaffolding contractors, have purchased the old-established business of Messrs. Ell & Co. They are transferring the business recently carried on by Messrs. Ell & Co., at Bridge Wharf, Paddington, to their Paddington Green-yard, but are keeping on and enlarging the yard at Kennington-road.

APPLICATIONS UNDER LONDON BUILDING ACTS, 1894 to 1909.

At Tuesday's meeting of the London County Council the following applications under the London Building Acts were dealt with. (The names of the applicants are given in parentheses):—

Finsbury, East.—Erection of a building on the eastern side of Dingley-road, Finsbury (Messrs. Yetts, Sturdy, & Usher for Messrs. T. Wallis & Co., Ltd.).—Consent.

Finsbury, East.—Erection of buildings upon a site abutting upon the southern side of City-road, the western side of Nelson-street, and the eastern side of Dingley-road, Finsbury (Messrs. Yetts, Sturdy, & Usher).—Consent.

Fulham.—Bay-windows and porches to houses on both sides of Ellaline-road and Larnach-road, Fulham (Mr. F. L. Poole for Messrs. Allen & Norris).—Consent.

Hampstead.—Erection of buildings on the south-western side of Haverstock-hill, Hampstead, south-eastward of Belsize-lane (Messrs. W. Woodward & Sons).—Consent.

Hampstead.—Erection of a motor garage at the rear of No. 53, Hollycroft-avenue, Hampstead, next to Ferncroft-avenue (Mr. S. C. Lathbridge for Captain G. A. Ballard, R.N.).—Consent.

Hampstead.—Addition to a one-story motor house at No. 8, Lindfield-gardens, Hampstead (Messrs. L. Solomon & Son for Mrs. B. Rosenfeld).—Refused.

Islington, West.—One-story shop in front of No. 287, Caledonian-road, Islington, abutting also upon the northern side of Freeling-street (Boot's Pure Drug Company, Ltd.).—Consent.

Islington, West.—Projecting entrance gateway at the entrance to Albion-yard, on the western side of Albion-street, Islington (Mr. G. Langford).—Consent.

Kennington.—Three one-story shops on the southern side of Lansdowne-road, Kennington (Messrs. Hulbert & Haysman).—Consent.

Marylebone, East.—Iron and glass hood at No. 21, New Cavendish-street, St. Marylebone (Mr. J. P. Williams for Dr. Forbes Ross).—Consent.

Norwood.—Addition to the General Post Office sorting office building on the northern side of Cornwall-road, Brixton (Messrs. E. Evans & Sons).—Consent.

St. George, Hanover-square.—Projecting clock at No. 34, Old Bond-street, Westminster (Greenwich Time, Ltd., for Messrs. Dodson).—Consent.

Wandsworth.—Erection of porches and gables, with bargeboards, in front of twenty-three houses on the south-eastern side of Longstone-road, Streatham (Mr. H. H. Foster for Messrs. Humphreys & Allen).—Consent.

Wandsworth.—Bay-windows and gables to houses on both sides of Salterford-road, Wandsworth, southward of Welham-road (Messrs. Swain & Selley).—Refused.

Westminster.—Projecting one-story shop at No. 165, Victoria-street, Westminster (Messrs. Z. King & Son for Mr. R. T. Raikes, Mr. H. Hiscox, and Louise Lean).—Consent.

Width of Way.

Bethnal Green, South-West.—Erection of buildings on the western side of Coventry-street, Bethnal Green (Mr. P. K. Allen for Messrs. Allen & Hanburys, Ltd.).—Consent.

Lines of Frontage and Projections.

Chelsea.—Erection of a cottage at the rear of Nos. 111 to 115, Fulham-road (Messrs. Elms & Jupp).—Consent.

Chelsea.—Erection of a building on the western side of Little Cadogan-place, Chelsea, at the rear of No. 65, Cadogan-place, and at less than the prescribed distance from the centre of the roadway of Little Cadogan-place (Messrs. W. D. Hodges & Co., Ltd.).—Refused.

St. George.†—Two one-story buildings on the eastern side of Hungerford-street, Commercial-road East (Mr. A. Calver).—Consent.

Width of Way and Lines of Frontage.

St. George, Hanover-square.—Addition at No. 9, Lyall-mews, Westminster (Messrs. C. Bowden & Co.).—Refused.

Width of Way and Construction.

Greenwich.—Open shed of a temporary character on the northern side of North-street, Charlton (Mr. F. Elleston).—Consent.

Lines of Frontage and Construction.

Holborn.—Iron and glass shelter at the entrance to the British Museum Tube Station, High Holborn (Mr. E. P. Grove for the Central London Railway Company).—Consent.

Mile End.†—Projecting crane at Crown Works, Bancroft-road, Mile End (Mr. J. M. Knight).—Refused.

Line of Frontage, Space at Rear, and Projections.

Kensington, North.—Erection of houses on the western side of Highlever-road, Kensington, northward of Oxford-gardens, with a flank abutting upon Oxford-gardens (Mr. G. Holmes for Mr. W. Osborn).—Consent.

Alteration of Buildings.

Chelsea.—Additional story at No. 103, Cheyne-walk, Chelsea (Messrs. Webster & Cannon).—Consent.

Kensington, South.—Alterations at No. 21, Church-street, Kensington (Messrs. C. Spreckley & Co., Ltd., for Messrs. Hookins & Johnson).—Consent.

Deviation from Certified Plans.

City of London.—Re-erection of No. 7, Love-lane, City (Mr. H. E. Quick for Mr. H. P. Edwards).—Consent.

Formation of Streets.

Kensington, South.—Formation or laying-out of a street for carriage traffic in continuation northward of Abbotsbury-road, Kensington (Messrs. Drivers, Jonas, & Co., for the trustees of the Holland Park Estate).—Refused.

Newington, West.—Formation of a new street for carriage traffic to lead from Alberta-street to Delverton-road, Newington (Messrs. Briant & Son).—Consent.

Cubical Extent.

Marylebone, West.—Conversion of the Portman-market, Church-street, St. Marylebone, into a garage (Mr. P. C. Middleton).—Refused.

Uniting of Buildings.

Camberwell, North.—Use of double doors of special construction in lieu of double iron doors to openings in a division wall at premises in Blucher-road, Camberwell, adjoining the London, Chatham, and Dover Railway (Messrs. G. Trollope & Sons and Colls & Sons, Ltd.).—Consent.

City of London.—Formation of an opening between Nos. 7 and 8, Aldgate High-street, City, at the first-floor level (Messrs. C. Spreckley & Co., Ltd.).—Consent.

City of London.—Uniting of No. 6, Edmund-place and No. 11, Hamsell-street, City (Mr. J. Farrer for Messrs. W. Wood & Son, Ltd.).—Consent.

Clapham.—Formation of openings between Nos. 26 and 28, High-street, Clapham, at the ground, first, second, and third floor levels (Mr. J. W. Stevens for Messrs. Williamson & Cole).—Consent.

Hampstead.—Uniting of Nos. 247 and 249, West End-lane, Hampstead, at the basement level (Mr. J. Luck for Messrs. Morreil Brothers).—Consent.

Holborn.—Formation of openings in the party walls at the first, second, third, and fourth floor levels between Nos. 100 and 101, and between Nos. 101 and 102, Hatton-garden, Holborn (Mr. J. Sawyer for Mr. A. W. Gamage, Ltd.).—Consent.

Hoxton.—Uniting of Nos. 265 and 267, Hoxton-street, Shoreditch (Mr. H. Shienberg).—Consent.

Kensington, South.—Uniting of Nos. 3 and 5, Bedford-gardens, Kensington (Mrs. I. Barrett).—Consent.

Marylebone, West.—Formation of openings in the party wall, between Nos. 75 and 76, High-street, St. Marylebone, at the ground and first floor levels (Mr. A. J. Hopkins for Messrs. J. A. Michell, W. Eastman, and Messrs. Biscuits Guillout).—Consent.

Paddington, South.—Uniting of Nos. 44 and 46, Inverness-terrace, Paddington (Mr. W. L. Gimson).—Consent.

Strand.—Uniting of Nos. 57 and 59, Regent-street, so far as relates to alterations with regard to the staircases and staircase approaches (Messrs. Emden, Egan, & Co.).—Consent.

The recommendations marked † are contrary to the views of the Metropolitan Borough Councils concerned.

PROJECTED NEW BUILDINGS IN THE PROVINCES.*

ALDERSHOT.—Hippodrome; Mr. Bertie Crewe, architect, 75, Shaftesbury-avenue, W.C.

Bangor.—Workhouse infirmary (15,000*l.*); Mr. B. Lumb, builder, Todmorden.

Bedford.—Rebuilding furniture warehouse; Messrs. Usher & Anthony, architects, 81, St. Paul's-square, Bedford.

Bognor.—School; Mr. W. T. Barlow, architect, Arcade-chambers, Bognor.

Bournemouth.—Savoy Hotel; Messrs. Creek, Gifford, & Oakley, architects, Hinton-chambers, Bournemouth; Messrs. George & Harding, builders, St. Paul's-lane, Bournemouth.

Bradford.—Proposed extensions to Central Baths Hall (9,000*l.*); Mr. R. G. Kirkby, architect, Town Hall, Bradford.

Brighton.—Workhouse nurses' home; Mr. J. W. Hawker, Court-chambers, North-street, Brighton. Picture palace, also additions to hotel; Mr. A. Carden, architect, 75 and 76, North-street, Brighton.

Caerphilly.—Council offices; Mr. J. H. Phillips, architect, Pembroke-terrace, Cardiff.

Clydebank.—Carnegie library (10,000*l.*); Messrs. Gardner & Whyte, architects, Glasgow.

Croydon.—Extensions to mental hospital (35,000*l.*); Mr. George F. Carter, Engineer, Town Hall, Croydon.

Doncaster.—Lecture hall (2,650*l.*); Messrs. Sprakes & Sons, builders, 37, East Laithgate, Doncaster.

Dunblane.—Hospital and gymnasium at Queen Victoria Military School (6,500*l.*); Mr. Bernard Reynolds, builder, 27, Randolph-terrace, St. Ninians, Stirling, N.B.

Easington.—Extensions to Thorpe Hospital; Mr. J. M. Longden, Surveyor, Easington Rural District Council.

Eccles.—Extensions to boiler house at Electricity Works (2,033*l.*); Mr. N. H. Hacking, architect, Derby-chambers, Blackfriars-street, Manchester.

Folkestone.—Harvey Grammar School (7,510*l.*); Messrs. G. Castle & Son, builders, 2, Broadmead-road, Folkestone.

Hastings.—Medical baths; Messrs. Richardson & Gill, architects, 46, Great Russell-street, W.C.

Hove.—A plan has been passed for alterations and additions to No. 201, Church-road for Messrs. J. Parsons & Sons for the London and Provincial Bank. Plans have been lodged for a theatre, Holland-road, by Messrs. Gilbert & Constanduros, and for a bakery, Kingsthorpe-road, by Messrs. Price Brothers.

Ilfracombe.—Free library (2,000*l.*); Mr. O. M. Prouse, Surveyor, Town Hall, Ilfracombe.

Langley (Bucks).—Bacon factory; Messrs. Fassnidge & Son, builders, 42-4, St. Andrew's, Uxbridge.

Leatherhead.—School (8,090*l.*); Messrs. Roll & Taylor, builders, High-street, Epsom. School; Messrs. Jarvis & Richards, architects, 10, Queen Anne's-gate, S.W.

Liverpool.—Cathedral chapel, Blackburn-place (10,000*l.*); Mr. Matthew Honan, architect, 36, Dale-street, Liverpool.

Manchester.—Enlargement of Council chamber; Mr. Henry Price, architect, Town Hall, Manchester.

Rotherham.—The following plans have been passed:—Seven houses, Albion-road and William-street, for Dr. J. W. Fox; alterations and additions to 306, Doncaster-road, for Messrs. Tennants Brewery Company, Ltd.; Empire Palace, Masborough-street, for the Masborough Empire Palace Syndicate; variety theatre, Masborough-street, for the Masborough Palace of Varieties, Syndicate. A plan has been lodged for six houses, Hatherley-road and Selwyn-street, for Mr. J. H. James.

Rutherglen.—Manse, Parish Church (2,500*l.*); Mr. H. E. Clifford, architect, 225, St. Vincent-street, Glasgow.

Salford.—Extensions to workshops, stores, and booster-room (1,075*l.*); Mr. John Ramsbottom, builder, Church-street, Pendleton.

Lewisham.—Tenders are to be invited for paving and forming Sangley-road passage. The tenders of Mr. J. T. Gloag and the Atlas Stone Company, Ltd., have been accepted, the former at 489*l.* for kerbing, channelling, and making-up the roadway of Collingtree-road, Sydenham, and the latter for paving the footways of such road with artificial stone at 3s. 9d. per yard super. Plans have been passed for Mr. G. H. Paine for the erection of four houses in Perry Rise.

LONDON COUNCILS.

Battersea.—The tender of the Acme Flooring and Paving Company (1904), Ltd., has been accepted for a supply of 3¼-in. sectional hardwood blocks at 12*l.* 5s. per 1,000 for paving the carriageway of St. John's-road between Northcote-road and Messrs. Arding & Hobbs' premises. The estimated cost of this work is put at 2,075*l.* The footways of the portion of the road mentioned are to be repaved with 2-in. artificial stone at an estimated cost of 448*l.* The Borough Surveyor has been instructed to prepare an estimate with a view to the making-up and paving part of Clapham-common, West Side, with tar slag macadam for the carriageway, and 2-in. artificial paving and tar-paving for the footpaths. Repairs are to be carried out to a portion of Wycliffe-road at an approximate cost of 100*l.*

East Ham.—Plans submitted by the Engineer have been approved for constructing an underground convenience at the junction of Barking-road and Green-street at an estimated cost of 1,800*l.* Plans have been passed for Messrs. Clemens Brothers for the conversion of premises, Poulett-road, into a factory. Mr. G. A. Smith and the Rev. Chapman have lodged plans for an addition to "Denmark Arms" public-house, High-street North, and for an assembly hall at the rear of St. Edmund's Church, Halley-road, respectively.

Greenwich.—The London County Council is to be asked to consider as to preparing a town-planning scheme to embrace the whole of the undeveloped land within the Borough. Plans have been passed for Mr. E. Mills for the erection of additions to the Kentish Steam Laundry, Charlton-lane.

Hackney.—Plans have been passed for Messrs. Edmondsons, Ltd., for four houses in Stamford-hill. For the erection of a building at No. 210, Lower Clapton-road, plans have been lodged by Messrs. J. Garey & Son on behalf of Messrs. F. W. Glover & Son.

FOREIGN AND COLONIAL.

Building in Austria-Hungary.

The following notices are taken from the *Zentral Anzeiger für das öffentliche Lieferungswesen* (Vienna) of March 3:—The Town Council of Vienna have approved the plans for the erection of a large mixed school in the 14th district at a cost of 960,000 kronen (40,000*l.*). A company has been formed, under the ægis of the Anglo-Austrian Bank, with a capital of 5,000,000 kronen (208,300*l.*), for the purpose of erecting a sugar factory in Cservenka (Hungary). Work is to be begun in the autumn.

Business Opportunities in Western Canada.

The following remarks form part of a letter from a well-known municipal official in one of the largest and most progressive towns of Western Canada, which was received lately by Mr. Beecher Smith, of Manchester:—"Our building for 1911 exceeded five million dollars, and I am safe in saying that this year building will be considerably greater. Now, in the past, our chronic difficulty has not been to provide work for men, but to provide men for the work, and the problem promises to be more acute than ever during the coming season. We can do with all the good tradesmen that you can send. There is always a good opening for a good tradesman in this western country, and his best plan would be to come out here and call upon me immediately he arrives. I shall then have pleasure in taking him by the hand and doing what I can for him. He is quite safe in coming. Our Home Re-Union Association reduces to quite a trifling consideration the separation from his wife and family of the honest working man who has only sufficient means to bring himself out here. Lots of men have children of working age who could earn in this country five or six times the wages paid them at home. In addition to his own good wages and sure work, a tradesman can now bring his family here, and by means of the united effort make a very handsome living and save a great deal of money. We know that you will send us nothing but the right class of people, and I feel satisfied that you know that these people will be helpfully handled into good situations."

Opera House, Wellington.

H.M. Trade Commissioner for New Zealand reports that arrangements are being made for the erection of a new opera house at Wellington, at a cost of about 25,000*l.* Plans are being prepared for the construction of an up-to-date theatre, capable of accommodating between 1,700 and 2,000 people, at Wanganui.

Theatre, Russia.

With reference to the notice on p. 580 of the *Board of Trade Journal* of December 21 last relative to the proposed construction of a theatre at Yurieff (Dorpat), H.M. Consul at Riga (Mr. V. H. C. Bosanquet) reports that, according to the local press, the Artisans' Union at Yurieff have resolved to construct a new building, including premises for a theatre, at an estimated cost of about 210,000 roubles (about 22,000*l.*). The address to which communications should be sent may be obtained by British manufacturers on application to the Commercial Intelligence Branch of the Board of Trade, 73, Basinghall-street, London, E.C.

Building in British Columbia.

The Imperial Trade Correspondent at Vancouver (Mr. P. G. Shallcross) reports that by-laws have been passed in a town in British Columbia authorising expenditure as follows:—High school building, 103,000 dollars (about 21,000*l.*); public schools, 97,000 dollars (about 20,000*l.*); general purposes, 165,000 dollars (about 34,000*l.*); sewerage works, 115,000 dollars (about 23,600*l.*). The name of the municipality in question may be obtained by British manufacturers and contractors on application to the Commercial Intelligence Branch of the Board of Trade, 73, Basinghall-street, London, E.C.

* See also our list of Competitions, Contracts, etc., on another page

WING SECTION C-D

SOUTH ELEVATION

WING SECTION A-B

SCALE OF FEET

PROPOSED RESIDENCE FOR UNIVERSITY MEN.

It has been suggested that the bachelor element of Oxford and Cambridge men in London might be profitably drawn together by the provision of a residence on the outskirts of the metropolis similar in plan and domestic administration to that of the colleges, and in which the cost of living would be comparable with the average cost of board and lodging in London. The social advantages of the community system, the opportunity for athletics, the freedom from the worries of catering and a foreknowledge of the expenses involved, would, it is believed, appeal to many undergraduates about to complete their university careers, to whom the isolation and uncertain character of lodgings present an outlook that is by no means attractive.

The improved and extending facilities for transit in London and its suburbs admit at the present time of considerable freedom in the choice of a place of residence, and therefore the field for the venture in question is much wider than has hitherto been the case.

In order to obtain information as to the financial status of the scheme it has been necessary to prepare more than usually complete sketch plans to a scale of $\frac{1}{8}$ in. to 1 ft., showing the floors and elevations of the building throughout. Initially a design was prepared in the Tudor style of architecture, but finally a quiet Georgian treatment was adopted. The buildings, simple and symmetrical in arrangement, form three sides of a court 170 ft. square, open on the south, and consisting of two floors above the ground. The main entrance is upon the north front, and on this façade, some 225 ft. in length, are placed the administrative and public rooms, while facing the court on the south, and extending the entire length of the building, is a cloister open to the hall, smoking-room, and common-room, and therefore forming an agreeable enlargement of these rooms in the summer months. The first floor of this block is occupied by sets of residential apartments. On the attic floor some similar suites and a billiard-room containing two tables find a place on the west, while, duly isolated, on the east are the servants' quarters and porter's flat.

The two wings of the building, entirely devoted to residential quarters, contain sixty out of the total seventy-five suites of apartments. These rooms are approached by staircases from the court, and resemble in arrangement ordinary college buildings, good sanitary accommodation and separate access to the bedrooms being provided. The desirability of a lavish supply of bathrooms throughout has been realised, and the supply of hot water direct to the bedrooms should do much to reduce the cost of domestic service.

All the rooms contain open fireplaces, though a limited amount of supplementary heating will be effected, where necessary, by hot-water radiators.

The kitchen premises adjoin the hall on the ground floor, and the necessary cellarage is provided under the servants' hall and pantry on the north-east.

The area occupied by the building, including a margin of 10 ft. between the boundaries and the building frontages, is $1\frac{1}{4}$ acres, and the court laid down with grass will provide for three lawn tennis courts and for bowls.

One and a half acres are, however, included in the estimates, the additional ground giving room for two cricket nets and a fives court to be subsequently erected if required.

The building includes seventy-five sets of keeping and bedrooms, the former averaging about 13 ft. by 12 ft., and the latter, perhaps, 12 ft. by 12 ft. Bathrooms in the proportion of nearly two to every three residents, some private, others common to two suites, adjoin these rooms. The dining-hall and common-room each measure 38 ft. by 18 ft.; the smoking-room 26 ft. by 16 ft.; the billiard-room 38 ft. by 24 ft., and the remaining provisions include some spare rooms for guests, rooms for the bursar and housekeeper, and good kitchen and servants' quarters. The cost of furnishing throughout has been considered, but it is thought that it might perhaps be desirable to let unfurnished a certain small proportion of the residential apartments.

NORTH ELEVATION

Proposed Residence for University Men. Design by Messrs. A. W. S. Cross, F.R.I.B.A., and Alan E. Munby, A.R.I.B.A.

THE ENGLISH HOUSE FROM THE NORMANS TO THE TUDORS.*

Houses of the XIVth Century.

"The majority of the lesser houses of the XIVth century are built upon the same or similar lines to those that preceded them.

That at Markenfield, Yorks, an almost perfect example, for which the licence to crenellate was granted in 1310, somewhat resembles Little Wenham. It consists of two blocks built at right angles to each other. The one has the kitchen and cellars on the ground floor and a hall and great chamber above, with appendant garderobe block, and the other the servants' department, with a chapel and another chamber above. This chamber, which can also be reached by a vice from the courtyard, seems in later times to have been made into two stories, and the same has happened to the great chamber. But the original aspect of the house is otherwise maintained, and the beautiful traceried windows that lighted the hall and the chapel are still quite perfect.

Another house, somewhat later in date, but of similar plan, exists at Meare, in Somerset. In one block is the hall, over a cellar and servants' hall, and in the other the kitchen, with a large solar above. Brinsop Court, Herefordshire, is another interesting house with a fine upstairs

* In continuation of a lecture by Mr. W. H. St. John Hope, delivered at Carpenters' Hall, London-wall, recently, the first part of which was given in our last issue, p. 303.

hall of early XIVth century date, but it is at present somewhat obscured by later additions. The open timber roof is of peculiarly striking character.

The prior's house at Ely, now the Deanery, is an example of intermediate date, having been built by Prior John Crauden in 1325-6. Its principal remaining features are the hall, etc., and a very beautiful chapel, all raised upon sub-vaults disposed at right angles to each other.

The house, now also the Deanery, of another Benedictine dignitary, the Abbot of Westminster, belongs to the class under notice. It consists of the Norman solar and chapel, raised above the vaulted entry to the cloister, and having attached to it on the south-west the old hall and its kitchen. The latter now serves the new hall, built over cellars along the west side of the court by Abbot Nicholas Litlington, between 1370-80; the house was at the same time remodelled and connected by a gallery with the Jerusalem or great chamber at the north end of the new hall. The Jericho parlour and rooms over, now forming the north side of the court about which the house is built, were added by Abbot John Islip early in the XVIth century.

The type of house of which a hall on the ground level is the principal room continues to be found, especially during the first half of the XIVth century.

An example at Northborough, Northants, of a date *circa* 1330, has a hall, 36 ft. long, which, though masked by modern divisions, still retains its original traceried windows, now blocked, and a beautifully crocketed gable with ornate chimney shaft. The doorways within the screens are also more ornate than usual.

At Sutton Courtenay is another XIVth-century house of the same plan as that at Meare, though with the hall upon the ground floor. This has a fine open roof, but was sorely maltreated a few years ago, when the original windows and other features were destroyed. At right angles to its upper end is a contemporary wing with rooms on the ground floor, and the solar and other rooms above. The solar retains its windows and roof, but is now sub-divided, and the roof is in the last stage of decay through being eaten by worms. There is a corresponding wing of later date at the opposite end of the hall, which contains the kitchen and offices, with chambers over, but these have been much altered.

Penshurst.

Lord de Lisle's magnificent house at Penshurst has for its heart an almost complete dwelling of the middle of the XIVth century. It consists of a fine hall on the ground floor, intact even to its roof and the hearth for the fire, with porches covering the doorways at each end of the screens. The north porch has a chamber over. The south porch contains a large staircase to the great solar over the buttery and pantry, which occupy the block athwart the east end of the hall. The kitchen was semi-detached beyond this, but has disappeared. Across the dais end of the hall is another block with a vaulted basement, and over it the chapel, and formerly other rooms, reached by a staircase from off the hall dais. Licence to crenellate this mansion was granted in 1341.

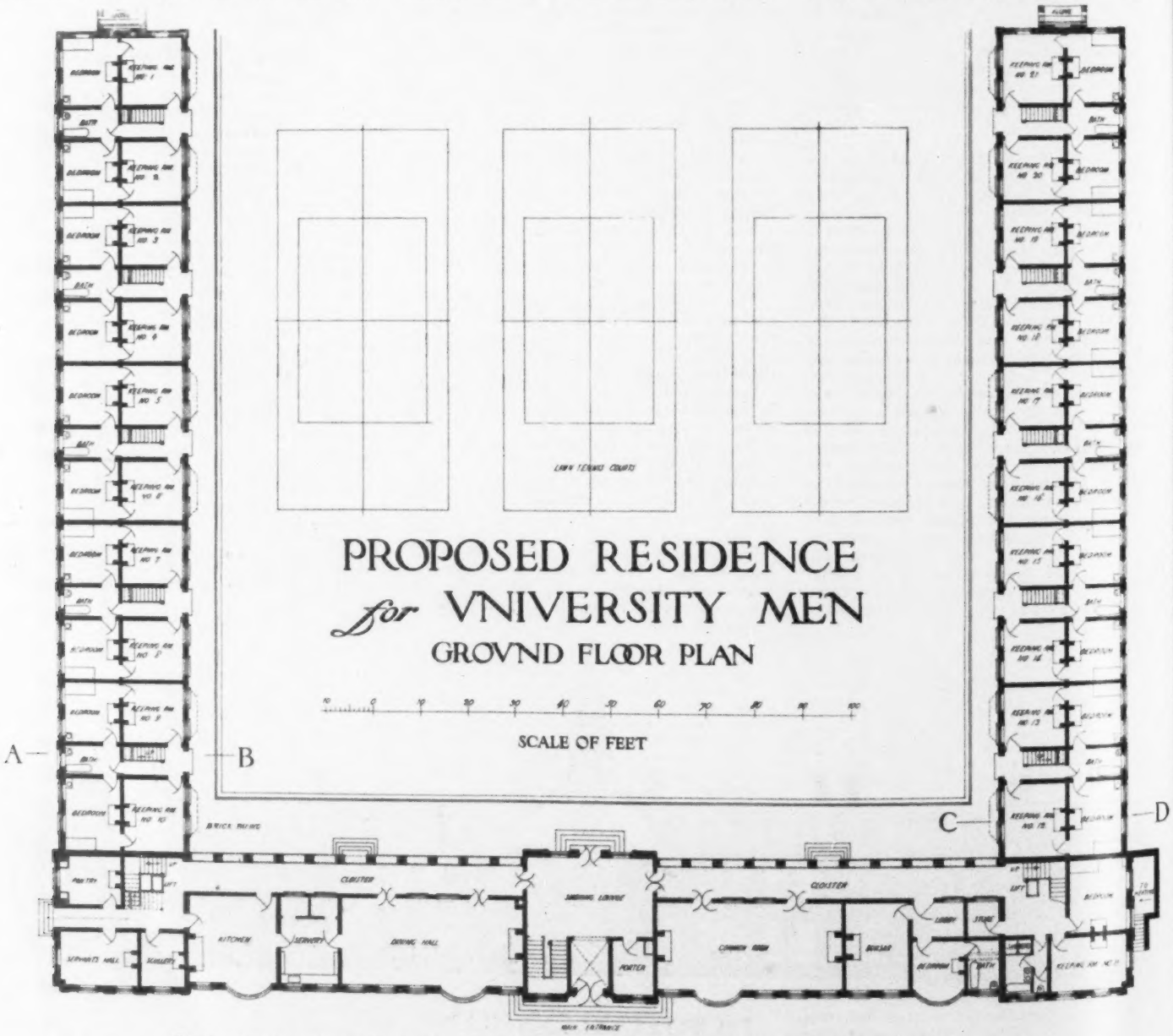
Broughton Castle.

Another large and important early XIVth-century house is incorporated in the fine Elizabethan mansion now called Broughton Castle, in Oxfordshire. It consisted originally of a hall on the ground floor, with the buttery and pantry at one end, with rooms over them as well as above the screens. Beyond was the kitchen. At the other end of the hall, and fortunately in very perfect condition, is a curious series of vaulted passages enclosing a strong-room and leading to a large vaulted sub-hall beneath the great chamber. Next to this is a broad flight of steps up to the chapel, which joins on to the north end of the great chamber. The chapel has a beautiful east window, and retains its stone altar. The great chamber has rooms west of it, over the vaulted divisions below, and another block on the south-east with garderobe tower attached. All this end of the house, except the chapel, which is carried up to the full height, has an upper story as well, and on the space, formerly open, east of the chapel staircase another three-storied block was added in the XVth century. The upper part of the hall has given place to an added Elizabethan story, and has been otherwise altered.

How Houses were Used.

This seems a convenient moment for saying a few words about the way in which such houses as I have described were used. Some of you have, no doubt, wondered where the servants were lodged in these early houses with few rooms. The answer is that at first they lived in the hall, they took their meals in the hall, and they slept in the hall; while the master and his wife and other ladies of the house shared the upstairs chamber, which was often sub-divided by partitions.

The hall usually formed the middle or principal section of the house, and was open from floor to roof. It was sometimes on the ground level, sometimes raised upon a low cellar or more pretentious sub-vault. The floor was paved with stone flags or tiles, or boarded if upstairs, and strewn with rushes or litter. One end of the hall was shut off by a wooden screen to form a passage, into which the doorways from without opened. This screen was ceiled to carry a gallery overhead, or sometimes one or more rooms. In the middle of the hall floor, as still at Penshurst, was the fire of logs piled up on an open hearth and supported



Design by Messrs. A. W. S. Cross, F.R.I.B.A., and Alan E. Munby, A.R.I.B.A. *(See previous page.)*

by fire-dogs, or burnt in a metal brazier; the smoke ascended to the roof and escaped as best it could through an open lantern above the fire. In the lesser halls there was a chimney for the fire in one of the side walls, having over it a stone or plaster hood, or sometimes an ornamental "chimneypiece." At the upper end of the larger halls was the dais, a platform one or two steps high, on which stood the high table for the master and his family and persons of quality. The other tables were arranged along the side walls, and were long and narrow, standing upon trestles and set in front of benches against the walls. The hall roof was of open carpentry work, according to the fashion of the time, and covered with tile, shingle, or thatch. The windows were generally of two coupled lights, with tracery in the head, and divided part way up by a transom. Above this the openings were glazed, either in frames wedged into a rebate or, in later times, in grooves cut in the stonework, while the lower part was shuttered only. The sill had a deep recess cut out of the middle, so as to form a seat on each side. The walls were plastered and limewashed or ochred, and sometimes decorated with colour, or covered up to some height with wainscoting, which was almost always painted.

In the entrance passage, or "screens," as it was and still is called, were doorways opening into the buttery and pantry, with a passage between leading to the kitchen; the kitchen itself was generally semi-detached in order to obtain plenty of room with ample height and light. Over the buttery and pantry was the solar or great chamber of the master and his family; but in course of time this was transferred to the other end of the hall and enlarged in various ways, and its former place taken by a room or rooms for the servants.

Fortifications.

During the XIIIth, XIVth, and XVth centuries few houses of importance were built without being fortified in some way, either by gatehouses or walled enclosures or by merely adding battled parapets. Before this could be done a formal "licence to crenellate," or fortify the building with *crenelles* or battlements, had to be obtained from the Crown. Since these often refer to buildings still existing they are of special interest as giving the approximate dates when such were begun.

Castle-like Houses.

To the last quarter of the XIVth century belongs a group of large castle-like houses built upon an entirely new plan, consisting of ranges of chambers disposed about a rectangular courtyard, with lofty towers at the outer corners. The earliest in date seems to be Scotney, in Kent, the owner of which obtained licence to crenellate in 1377. Other notable examples are Bolton, in Wensleydale, dating from 1379-80; Cowling, in Kent, and Wressle, Yorks, from 1380; Sheriff Hutton, in Holderness, from 1381; Bodiham, in Kent, from 1385-6; and Lumley, in Durham, from 1392-3. It is interesting to note that the moated Kentish examples have rounded corner towers, while all the north-country unmoated examples, like Bolton, Wressle, and Lumley, have the corner towers rectangular. Middleham is another example of the type, but singular in having the ranges of chambers built about the great tower of the Norman castle. This contained a fine hall and other good rooms on the first floor, which continued in use. Whether and in what way these fine and well-defended houses were derived from great towers like those at Middleham and Hedingham it would take too long now to discuss, but they were certainly a great advance in the direction of more comfort and privacy, and carefully planned to that end. Most of them, unhappily, are more or less ruined, as a penalty for the part they were able to play during the Great Rebellion, but Lumley has always been lived in, and is still perfect. Bolton, too, is nearly perfect, and in part retains its floors and roofs. In the east side is a strong gatehouse, and the basement stories about the court were massively vaulted throughout. The hall occupied all the north side of the first floor, and had the kitchen in the tower east of it. Opposite the hall was the chapel. The ranges were three stories high, and the towers contained four stories of chambers above the vaulted basements. There was thus ample room for the lord and his family, his guests, and the servants.

Leland, in his "Itinerary," writes of Bolton that "the castell standithe on a roke syde; and all the substaunce of the lodgyngs in it be included in four principall towres. Yt was an eighteen yeres in buildynge, and the expencis of every yere came to 1,000 marks," or 12,000*l.*, an enormous sum for the time. Leland continues: "One thinge I much notyd in the haulle of Bolton, how chimeneys were conveyed by tunnells made on the syde of the wauls betwixt the lights in the haull, and by this meanes, and by no lovers, is the smoke of the harthe of the hawle wonder strangely convayed." This curious contrivance, which may yet be seen, does not seem to have been tried elsewhere, and henceforth the great chimney in the side of the hall became general. The contract for building one-half of Bolton still exists, and was made between Sir Richard le Scrop and John Lewyn, mason, in 1379. The work was to cost 100s. a perch, measured by 20 ft. to the ell.

Houses of the XVth Century.

The lesser houses of the XVth century differ but little from those of the preceding period, except in the greater importance of the ranges of chambers at either end of the hall and the frequent addition to the hall itself of a new feature in the form of the bay window. This was usually built out at one end of the dais, but in large houses a second was often added opposite the other. The bay was square or half octagon in plan, and its ceiling frequently a richly-groined vault. The recess contained a sideboard for the display of plate and for carving at, and often served also as a passage to rooms behind the hall or to the cellar beneath it.

The oriel window was another charming architectural feature which became common in the XVth century, though introduced earlier. Two beautiful examples may be seen at Great Chalfield. It was perhaps suggested by the sill seats of the XIIIth and XIVth century hall and solar windows, and the mere corbelling out of such windows would produce a common type of oriel. Rounded and half hexagon oriels also occur; but, whatever their plan, they are always, like the bay, most ornamental features to the outside of a house.

We have, happily, an abundance of examples of XVth century houses of all dates, and it is somewhat difficult to pick out typical illustrations of them.

Houses of the hall type are still to be found. Great Chalfield, Wilts, is a beautiful example, *circa* 1440, as is the similar planned house at Norrington in the same county. South Wraxall, another fine Wiltshire house, was built about 1450, and has a detached chapel and later additions. The gatehouse has a good oriel.

The Courtyard House.

In the XVth century is also to be found, in its full development, the courtyard house. This delightful type, in which our country is so rich, was brought about by an interesting process of evolution.

Starting with the early form of house of simple rectangular plan, of which the principal room was the hall, we have seen it expanding into a T-shaped or L-shaped block by the growth of the chambers over the buttery and pantry. Next comes the transfer of the solar with its undercroft to the far end of the hall, and its extension by the addition of a chapel and other rooms. We thus get a house occupying three sides of an open court. The joining of the ends of the wings by a wall turned the court into a courtyard, which was often entered through a gatehouse. It only needed the addition to this of flanking chambers extending to the side wings to complete the type of courtyard house at which we have now arrived.

This type differs materially from the Bolton and Bodiham group in being more strictly domestic, for though the larger houses continue to be protected by walls and gatehouses, or by moats and ditches, the invention of artillery had long made these but a pretence at fortification. Even the frowning front of Hurstmonceux could not have withstood for long the destructive pounding of cannon shot.

The size of these houses varied with the social status of the owner, and many had entrance gateways of considerable architectural merit.

Haddon Hall.

The most fascinating, perhaps, of all our courtyard houses, apart from its delightful situation, is surely Haddon Hall, in Derbyshire.

It had its beginnings in a Norman chapel, which still occupies its southern angle. This chapel adjoined the house of the lord of the manor, who had leave from King John to enclose both with a wall. The original house was apparently taken down in the XIVth century, and the courtyard sub-divided by building across it the existing hall and its perfect set of offices. The entrance was through a strong gatehouse on the north, and by degrees both courts were built about with two-storied ranges of XVth and XVIth century lodgings, forming as a whole such a combination as cannot easily be paralleled.

Winfield Manor House.

Another fine house of similar plan also exists in Derbyshire, at South Winfield. Unlike Haddon, which is still perfect and quite habitable, though not so used, Winfield Manor House is only a ruin, but it is nevertheless of very considerable interest. It has a large outer court, entered through a gatehouse, and built about with stables and farm buildings, some of which are standing. The inner court is entered through a second gatehouse set in the middle of a transverse range. Opposite to this, and forming the north end of the house, is the great hall and its adjuncts. The hall has a beautiful porch, and an equally fine bay window, within which is the stair down to a vaulted cellar extending under the hall. Within the screens are the usual doorways to the buttery and pantry, above which was the great chamber, reached from a vice attached to a second porch beyond the screens. The kitchen is in the usual place, but surrounded by buildings of several stories, all full of lodgings. Other ranges of lodgings occupied the east and west sides of the court; but the former have disappeared, and of the latter only the outer wall and a lofty garderobe tower remain. A fragment of the chapel, which was semi-detached, as at Haddon, is left at the north-east angle. This fine house was built by Ralph Lord Cromwell, and Lord Treasurer, about 1450, and deserves to be better known than it is, especially since it is all of one date, and was planned by a master mason who must have been a notable craftsman.

Hurstmonceux.

Hurstmonceux Castle, in Sussex, is another great courtyard house, begun before Winfield Manor House, but not finished till long after. Unlike all the houses hitherto described, this was built wholly of beautiful brickwork. It consisted of three courts, within a quadrangular enclosure, set about with towers and surrounded by a moat. The entrance was through an elaborate gatehouse, reached by a drawbridge. The house is now a mere shell, all the buildings within it having been destroyed about 1800 to gratify the spite of a lady!

Icomb Place.

Icomb Place, Gloucestershire, is a good example of the application of the courtyard type to lesser houses; it is, moreover, as complete as Haddon Hall. The entrance is through a gatehouse of quite modest pretensions, leading into a small courtyard having the hall opposite the entrance. On the right is a parlour, with a bay window in the corner which masks a doorway into the gatehouse block. On the left are offices joining on to the rest of this block. The hall has a fine open roof, with two large windows on one side, and on the other a window and a chimney. The screens contain the usual doorways to the buttery and pantry, and form a passage to a second court beyond, surrounded by the kitchen, brewhouse, bakehouse, etc. All the ranges except the hall are two-storied, and there is no lack of proper accommodation for the master and his household. The gatehouse front has a fine open roof like that upon the hall. Icomb Place dates from the middle of the XVth century.

Oxburgh and Falkbourne Hall.

Oxburgh Hall, Norfolk, is another fine example of a late XVth-century courtyard house, built throughout of beautiful brickwork. The licence to crenellate is dated 1482. The house is still surrounded by a moat, but the hall range was pulled down about a century ago. The most striking part now is the stately gatehouse.

Falkbourne Hall, in Essex, begun probably on the issue of the licence to crenellate it in 1439, was originally a small courtyard house, peculiar in having a large and prominent tower of good brickwork at one corner.

There are two other houses of this period of remarkable plan and construction that must be described, if only to show how completely the mediæval masons could surmount difficulties.

The tower that originally crested the Norman mount of Warkworth Castle, Northumberland, was replaced early in the XVth century, probably between 1435 and 1440, by a cruciform house of three stories, which, though a mere shell, is still practically complete throughout. The King's Commissioners in 1538 described it as "a marvellous proper dongeon of eight towres all joned in one howsse togethers," and a survey of 1567 says it "ys buyld as a foure square; and out of every square one towre . . . and in the same conteyned, as well a fare hall, kychinge, and all other houses of offices, verie fare and aptely placed, as also great chambre, chapell, and lodgings for the lord and his trayn. In the middle thereof is a peace voyd, which is called a lanterne, which both receyveth the water from diverse spowtes of lead, and hath his conveyance for the same, and also gevith light to certaine lodgings in some partes. And on the part of the same at the top ys raysed of a good hight above all the houses a turret, called the watch-house; upon the top whereof ys a great vyew to be had, and a fare prospect, as well towards the sea as all parties of the land."

Tattershall Castle.

The other house to which I desire to call your attention is the noble brick tower of Tattershall Castle, perhaps the finest of its kind in existence. It was built for the same Ralph Lord Cromwell who owned Winfield Manor House, and it is instructive to compare his Derbyshire mansion of stone, quarried from the hill on which it stands, with the great tower of brick in the Lincolnshire fens. The latter is oblong in plan, with an octagonal tower at each corner, and an internal area of about 50 ft. by 25 ft. Although floorless and roofless, it was, until a few months ago, structurally complete from top to bottom. It consists of a low basement, with four stories of chambers above and a low lantern-like top-story projecting between the towers as a gallery carried on a four-fold series of corbels. The height thus far is about 100 ft. The towers were carried up a stage higher and capped by conical spires. The ground story is entered by a doorway at the same level, and the other floors by a vice, or spiral staircase, in the south-west turret, with doorways opening into a wall gallery on each floor. The four principal stories formed each a separate room, with its own richly-carved chimneypiece, but there were also smaller chambers opening from them into the corner turrets. The tower thus contained four large rooms and at least sixteen small rooms, exclusive of garderobes, or the five divisions of the basement, wherein was also the well. The kitchen and offices were in a semi-detached building to the south-west, now destroyed, communicating with the tower by a doorway on the first floor. All the brickwork is of the highest excellence, but the doorways and windows are wrought in stone, as are the splendid chimneypieces which were so scandalously torn out and sold a few months ago.

So few of you probably have ever been to Tattershall Castle that you will no doubt be interested in seeing the chimneypieces in question. You may also wonder, with me, why the National Trust, which so easily raises enormous sums for buying headlands and fields such as abound on every side of us, thought 2,000*l.* too much to pay for one of the stateliest and most perfect brick towers in Christendom.

The fine brick tower, which, with the inner gatehouse, is practically all that is left of the once magnificent palace of the Bishops of Lincoln at Buckden, was obviously copied from the great Tattershall tower by Bishop Russell (1480-94), who, no doubt, had often seen it and admired it. This gatehouse is remarkable for having the Bishop's arms over the arch worked also in brick with coloured glazes, and the roses carved in stone.

Both Warkworth and Tattershall, with but little alteration, could be made into what would be deemed comfortable residences, even under modern conditions, and the same may be said of the majority of XVth-century houses. In proof of this one may point to the number that have been continuously lived in since they were built.

Carpentry Work.

The wooden halls and houses of early Norman times for which we have historical evidence have long since perished, as have the lesser dwellings of the same period. The tradition of them, nevertheless, continued after the introduction of stone buildings in the wooden pillars that formed the divisions, and if those once at Waverley and Kirkstall, and Westminster and Wells, have gone, a Norman fragment remains at Farnham and the whole construction in the Norman hall of Leicester Castle. Even so late as the XVth century there were set up the wooden pillars still to be seen in the Guildhall at York. On the manor of the Moor, near Uxbridge, formerly belonging to the Knights Templar, is a complete wooden hall, *circa* 1230, now converted into poor tenements, and at Tiptofts, in Essex, are some interesting remains of a pillared hall, likewise wholly of carpentry work, of the end of the XIIIth century.

Of the continued use of carpentry work in the XIVth century, in districts were stone could not easily be had, some useful examples exist. At Solihull, in Warwickshire, is a complete wooden house, *circa* 1330, with a hall and porch, and a transverse kitchen wing with solar, etc., over, reached by a stair within the porch. At Baggiley, in Cheshire, is a fine hall of carpentry work, *circa* 1330-40, and another good early example at Malvern was destroyed so lately as 1838. In Windsor Castle there are still considerable remains of a long and narrow cloister, set about with ranges of two-storied lodgings, all of carpentry work, built in 1351-2 for the thirteen canons of the Order of the Garter and their vicars. At Nursted, in Kent, there was till lately another instance of a stone hall, *circa* 1330, with a good open roof carried by wooden pillars. The general absence of early kitchens and offices belonging to stone halls that have survived suggests that they were usually only of half-timbered construction.

In Lancashire and Cheshire, and in Shropshire, Herefordshire, and Worcestershire, as also in Suffolk and Essex, and to some degree in Sussex and Kent, and in other districts where stone was scarce and timber easily obtainable, houses built wholly of carpentry abound. They range from those of the largest size to the humblest cottage, and extend in date throughout the XVth, XVIth, and XVIIth centuries. Those in the West Country, as at Bramhall, often have the intervals between the main timbers filled in with quatrefoils or other ornamental forms, or with a number of curved braces. In the eastern and south-eastern counties the construction is much simpler, but ornament is supplied by traceried barge-boards and carved and moulded beams, and by carved corner posts and spandrels.

The fine XVth-century manor house at Ockwells, Berks, is another good instance of half-timbered construction, and the style prevalent in Suffolk throughout the XVth and XVIth centuries is well exemplified by the guildhall at Lavenham, which has also a good carved corner post and oriel windows. The actual construction of these buildings can be seen in an interesting house at Boxford, also in Suffolk, which has lately been partly dismantled, preparatory, I fear, to its "restoration," a fate it does not deserve."

LEGAL COLUMN.

Compulsory Purchase.

Sect. 92 of the Lands Clauses Consolidation Act, 1845, provides that "no party shall at any time be required to sell or convey to the promoters of the undertaking a part only of any house or other building or manufactory if such party be willing and able to sell the whole thereof."

In the case Regent's Canal and Dock Company *v.* London County Council, the County Council, for an improvement scheme, served notices to treat on the plaintiffs for two pieces of "land and wall," which consisted of a narrow strip running parallel with the Regent's Canal and certain approaches to New North Road Bridge. The plaintiffs claimed 822,000*l.*, and unless this sum was agreed to they required the Council to take the whole of the canal and lands and works appurtenant thereto, which they valued at some 2,080,057*l.*, on the ground that the land which the Council sought to acquire formed part of a "building or manufactory" within the meaning of the above section. The Court held that the land sought to be acquired did not form part of a "building" within the section; but the learned Judge pointed out that there appeared to be no decided case on the meaning of the word "building" in this section.

Illegal Action by Societies: The Trade Disputes Act.

In the present crisis of the coal strike the Press are commenting on the peaceable attitude of the men and the absence of outrage. We are far from wishing in any way to belittle the conduct of the men, but the fact must be pointed out that this absence of outrage is really due to the strike being universal and there being no necessity for the exercise of "peaceful persuasion." Only two small mines continued working after the declaration of the strike, and at these two mines there were scenes of violence, the strikers, under pretence of "peaceful persuasion," intimidating the few men working, by hostile demonstrations in force. It would be a serious mistake to consider that the present strike in any way weakens the case made by nearly all classes of employers against the Trade Disputes Act. If the strike ceases to be universal, if some workers in mines desire to return to work and to dispose of their labour as they have a right to do, the demon of "peaceful persuasion" will at once be raised, the men will be intimidated, and the property of their employers will be damaged, and sect. 4 of the Trade Disputes Act will serve to protect the funds of any union which has incited the men to acts of violence from being attached to answer for the damage done.

In this connexion we may point out that the case for the repeal of the Trade Disputes Act has received support from an unlooked-for quarter. A political society, "in contemplation or furtherance" of its objects, has seen fit to "peacefully persuade" the citizens of the metropolis by indiscriminately breaking shop windows. The Government have recognised the seriousness of such a conspiracy, and universal approval has been given to the principle that the funds of the society should be made liable for the damage done. Public sympathy has at once been accorded to common sense and common law redress being applied to such criminal action. Surely the public may now also ask that common sense, common law, and common justice may again apply in the case of trade unions? No wonder that a large section of the community is asking why these trade societies should be so privileged.

LAW REPORT.

COURT OF APPEAL.

(Before the MASTER OF THE ROLLS and Lords Justices FLETCHER MOULTON and BUCKLEY.)

Painter's Claim against Builders and Decorators under Workmen's Compensation Act: Richards *v.* Sanders & Son.

THIS case was heard on Saturday, the 16th inst., upon the appeal of the respondents from the award of his Honour Judge Selfe, sitting at the Marylebone County Court, as the arbitrator under the provisions of the Workmen's Compensation Act.

Mr. Ellis Hill appeared for the appellants, and Mr. Jacobs for the applicant, the workman.

Mr. Ellis Hill said his clients appealed from the award of the County Court Judge upon two grounds—first that there was no evidence before the learned Judge entitling him to hold that the applicant was incapacitated by the accident; and, secondly, appellants asked for what was practically a new trial upon the ground that the learned County Court Judge admitted certain statements in certificates as evidence which were not evidence, and which induced the learned Judge to believe that a *bonâ-fide* accident had happened to the applicant, and that the man was really suffering from the effects of the alleged accident.

The facts of the case were these:—William Richards, the applicant, alleged that on May 8, 1911, he was working for the respondents, a firm of builders and decorators, in a kitchen of a house in Bryanston-square. Richards was a painter, and on the day in question he was working with another man in the kitchen of the house. Richards' story was that their work being high up a painter's tressle was put near the wall, that a board was put through the tressle, and that the other man with whom he was working got up the tressle and on to one end of the board that projected, and that he was instructed by the foreman to hang on to one end of the board as a counter-weight, and while hanging on in that way he (applicant) strained his heart and was taken very ill. Richards was undoubtedly taken very ill at the time, but his own story was contradicted by nearly everybody at the hearing. He made no complaint until after he had been to St. Mary's Hospital. If it was a *bonâ-fide* case the evidence from the hospital was of primary importance as to how Richards was treated. He (Counsel) could not help feeling that the applicant's advisers must have thought that the evidence from the hospital would have put an end to the applicant's case, because they subpœnaed Dr. Wilcox, one of the physicians at the hospital—a gentleman in a very high

LAW REPORT—*continued on page 346.*

List of Competitions, Contracts, etc.

For some Contracts still open, but not included in this List, see previous issues. **Those with an asterisk (*) are advertised in this number**: Competitions, —; Contracts, iv. vi. viii. x.; Public Appointments, xviii.; Auction Sales, xxiv.

Certain conditions beyond those given in the following information are imposed in some cases, such as: the advertisers do not bind themselves to accept the lowest or any tender; that a fair wages clause shall be observed; that no allowance will be made for tenders; and that deposits are returned on receipt of a bona-fide tender unless stated to the contrary.

The date given at the commencement of each paragraph is the latest date when the tender, or the names of those willing to submit tenders, may be sent in.

*** It must be understood that the following paragraphs are printed as news, and not as advertisements; and that while every endeavour is made to ensure accuracy, we cannot be responsible for errors that *may* occur.

Competitions.

MARCH 25.—**Colchester.**—SCHOOL.—Limited to architects practising in the borough.

MARCH 30.—**Edinburgh.**—MEMORIAL TO KING EDWARD.—Limited. See Competition News, p. 151, February 9.

MARCH 31.—**Manitoba, Canada.**—PARLIAMENT BUILDINGS.—The Government of Manitoba invite designs for the new Parliament buildings to be erected in the City of Winnipeg. See advertisement in issue of February 9 for further particulars.

APRIL 13. — **Ormskirk.** — CLUB-HOUSE.—Competitive plans are invited for proposed club-house for Ormskirk Golf Club. See advertisement in issue of March 1 for further particulars.

APRIL 20.—**Birmingham.**—BLUE COAT SCHOOL.—Limited to local architects. Assessors, Mr. G. H. Hunt, F.R.I.B.A., and Mr. C. E. Bateman, F.R.I.B.A. Particulars from the Secretary, the Blue Coat School, Birmingham.

MAY 1.—**Rhos Ruabon.**—PAIR OF WORKMEN'S COTTAGES.—Premiums of 10*l.* and 5*l.* Assessor, Mr. Raymond Unwin, F.R.I.B.A. Particulars from Mr. G. Meirion Griffiths, Rhos Ruabon.

MAY 1. — **Wombwell.**—SWIMMING BATHS.—The Wombwell U.D.C. invite designs in competition for public swimming baths, to be erected in Hough-lane, Wombwell, Yorkshire. Three prizes of the value of 40*l.*, 30*l.*, and 20*l.* respectively are offered for the designs placed first, second and third respectively by the assessor. See advertisement in issue of February 16 for further particulars.

MAY 15.—**Portland.**—COUNCIL OFFICES.—The Portland U.D.C invite competitive designs and plans for Council Offices. See advertisement in issue of March 8 for further particulars.

JUNE 1.—**Dunfermline.**—INSTITUTE AT NETHERTOWN.—Cost not to exceed 7,000*l.* Premiums of 20*l.*, 15*l.*, and 10*l.* Assessor, Mr. E. A. Jamieson. Particulars from the Secretary, Carnegie Trust, Abbot-street, Dunfermline.

JUNE 28. — **Hale, Cheshire.**—TOWN PLANNING SCHEME.—Premiums 50*l.* and 25*l.* Particulars from the Council Offices, Hale.

JUNE 30.—**Padiham.**—TOWN HALL, BATHS, ETC.—Premiums 40*l.* and 20*l.* Particulars from Mr. J. Gregson, A.M.Inst.C.E., Surveyor's Office, Padiham.

JULY 1. — **Dusseldorf.** — A plan for the extension of the City of Dusseldorf. Premiums of 1,000*l.* to 375*l.* Conditions on application to the Chief Burgomaster, Dusseldorf. A translation appeared on page 365, September 29.

AUGUST 30. — SAXON SNELL PRIZE. — Fifty guineas; with medal, is offered for essay on a hospital subject. Particulars from the Sanitary Institute, 90, Buckingham Palace-road, S.W.

NO DATE. — **Cardiff.** — FOOTBALL STANDS.—Premiums 30*l.*, 20*l.*, and 10*l.* Particulars from Mr. C. S. Arthur, 53, Queen-street, Cardiff.

NO DATE.—**Jordanhill, Glasgow.**—PROPOSED TRAINING COLLEGE.—Limited to six firms, named in Competition News, December 1, page 635.

NO DATE. — **Sheffield.** — CRIPPLES' HOME. — Limited to local architects. Mr. E. M. Gibbs, F.R.I.B.A., and Mr. F. E. P. Edwards, F.R.I.B.A., assessors.

NO DATE. — **Warrington.** — SCHOOL. — The Warrington Education Committee invite competitive plans for the erection of a public elementary school. See advertisement in issue of February 16 for further particulars.

Contracts.

BUILDING.

The date given at the commencement of each paragraph is the latest date when the tender, or the names of those willing to submit tenders, may be sent in.

MARCH 22. — **Darlington.**—ALTERATIONS.—For alterations to the Assembly Hall. Architects, Messrs. Kitching & Lee, Houndgate-chambers, Darlington.

MARCH 22. — **Great Yarmouth.** — ADDITION.—For addition to offices, for Messrs. Palgrave, Brown, & Son, Ltd. Plans and specifications with Messrs. Olley & Haward, architects, Queen-street, Great Yarmouth.

MARCH 22. — **Winchester.** — REPAIRS.—For the repairs to the Abbey House. Specifications at the City Surveyor's Office, Guildhall, Winchester.

MARCH 23. — **Draycott.**—HOUSE, ETC.—Erection of a dwelling-house, additions to a cottage, erection of new farm buildings, and alterations to existing farm buildings, sinking well, etc.; also for certain road works. Drawings, specification, and form of contract with Mr. H. T. Chapman, County Surveyor, County Surveyor's Office, Wells, Somerset. Deposit of 2*l.* 2*s.* for quantities.

MARCH 25. — **Barnsley.**—STORY.—For erection of an additional story, construction of strong-room, and internal alterations at the Society's offices in Regent-street, for the Barnsley Permanent Building Society. Plans and specifications seen, and quantities from Mr. J. Clegg, surveyor to the Society, Barnsley.

MARCH 25.—**Batley.**—HOUSE.—For erection of a dwelling-house at top of Carlinghow-lane, Batley. Plans and specifications seen, and quantities from Mr. John H. Brearley, architect, 68, Commercial-street, Batley.

MARCH 25.—**Londonderry.**—ALTERATIONS.—For alterations and improvements to premises in Bishop-street. Plans and specifications with Mr. J. M. Robinson, architect, 7, Market-buildings, Strand, Londonderry.

MARCH 25.—**Marlow.**—ADDITION.—For building an addition at Marlow, near Goolds Cross. Plans and specification with Messrs. W. H. Hill & Son, architects, 28, South-mall, Cork.

MARCH 26. — **Bradford.**—HOUSE.—For erection of house, Winburgh-road and Green-lane. Drawings and conditions seen, and quantities and form of tender from the City Architect, Town Hall, Bradford.

MARCH 26. — **Clayton.**—BATHROOM.—For erection of additional bathroom, etc., to the sanatorium at the Workhouse. Quantities from the architect, Mr. J. H. Bakes, M.S.A., Calverley-chambers, Victoria-square, Leeds.

MARCH 26. — **Sheffield.** — PURIFYING HOUSE.—The Sheffield United Gas Light Company invite tenders for the erection of a brick and stone purifying house. Drawings seen, and specifications and quantities from the Engineer, Mr. J. W. Morrison, M.Inst.C.E., at the company's offices, Commercial-street, Sheffield.

MARCH 27. — **Aberystwyth.**—HOUSE.—Erection of a house at Llanrhystyd-road. Mr. Arthur M. James, architect and surveyor, 8, Powell-street, Aberystwyth.

MARCH 27. — **Cottingham.**—SCHOOL.—For erection of an elementary school for boys. Plans and conditions seen, and forms of tender from the Building Surveyor, County Hall, Beverley. Deposit of 1*l.* 1*s.* for quantities.

MARCH 27. — **Eastrington.**—HOUSE.—Erection of a house. Plans and specifications with Mr. W. H. Blackburn, architect, Howden.

MARCH 27.—**Gabalfa.**—INSTITUTE.—Erection of a church institute at Gabalfa, near Cardiff. Plans and specifications at the Vicarage. Mr. H. B. Farr, Briar Dene, Whitchurch-road, Cardiff.

MARCH 27. — **Holyhead.**—ADDITIONS.—For the erection of additions to the Market Café, Stanley-street. Plans and specification with Messrs. Jos. Owen & Thomas, architects and surveyors, Exchange-chambers, Holyhead.

MARCH 27. — **Howden.**—SCHOOL.—For erection of an elementary school. Plans and conditions seen, and forms of tender from the Building Surveyor, County Hall, Beverley. Deposit of 1*l.* 1*s.* for quantities.

MARCH 27. — **Longwood.** — HOUSES.—For erection of seven dwelling-houses, Church-street. Plans seen, and quantities from Mr. J. Berry, architect and surveyor, 3, Market-place, Huddersfield.

MARCH 27. — **Morley.**—ADDITIONS.—For alterations and additions to finishing mills, for the Morley Cloth Finishing Company, Ltd. Plans and specifications seen, and quantities from Mr. T. A. Buttery, architect, Queen-street, Morley.

MARCH 27.—**Norton Malton.**—ADDITIONS, ETC.—For alterations and additions to the Council school, Commercial-street. Plans seen, and forms of tender from the Building Surveyor, County Hall, Beverley. Deposit of 1*l.* 1*s.* for quantities.

MARCH 27. — **Pontypridd.**—ALTERATIONS, ETC.—Erection of an additional storey and other alterations to the Clarence Hotel. Plans and specification seen, and quantities, on deposit of 2*l.* 2*s.*, from Messrs. A. O. Evans, Williams, & Evans, architects, Pontypridd.

MARCH 27. — **Stowmarket.**—ADDITIONS, ETC.—For alterations and additions to the bathing place, for the Stowmarket Swimming Club. Specification from Mr. G. W. Lingwood, 28, Temple-road, Stowmarket. Deposit of 2*l.* 2*s.*

MARCH 27. — **Turriff.** — ADDITIONS.—For additions to steading, Bogside, King Edward. Plans and specifications with Mr. W. L. Duncan, architect, Turriff, Scotland.

MARCH 27. — **Willerby (Staxton).** — REPAIRS, ETC.—For alterations and repairs to the teacher's house at the Council school. Plans seen, and forms of tender from the Building Surveyor, County Hall, Beverley. Deposit of 1*l.* 1*s.* for quantities.

MARCH 28. — **Burnley.**—LODGE, ETC.—For erection of registrar's lodge, offices, and conveniences. Specifications and quantities from the Borough Engineer and Surveyor.

MARCH 28.—**Gelligaer.**—RECONSTRUCTION.—For the reconstruction of the Harp Inn. Plans and specifications seen, and quantities from Mr. Sidney Williams, architect, Wharton-street, Cardiff.

MARCH 28.—**Huddersfield.**—CONVERSION.—For the conversion of the present latrines at the Paddock Council Schools into water-closets. Plans, specifications, and general conditions seen, and quantities and forms of tender from Mr. K. F. Campbell, M.Inst.C.E., Borough Engineer and Surveyor, 1, Peel-street, after the 20th inst.

MARCH 28. — **Stockport.**—WALL, ETC.—Erection of a boundary wall, with railings and gates, at Edgeley-road, Cheadle Heath, Stockport. Plans and conditions of contract seen, and specification, quantities, and form of tender from Mr. John Atkinson, A.M.Inst.C.E., Borough Surveyor, Town Hall, Stockport.

MARCH 28. — **Walton-on-the-Naze.** — CONVENIENCES.—For additions to public conveniences. Plans, specification, and quantities from Mr. Henry W. Gladwell, A.I.S.E., District Surveyor, Town Hall-buildings, Walton-on-Naze. Deposit of 1*l.*

MARCH 29. — **Donaghadee.** — HALL.—For erection of new Orange Hall, Donaghadee. Plans, specifications, etc., with Mr. Chas. A. Aicken, architect, 20, Rosemary-street, Belfast.

MARCH 29. — **Salop.**—ALTERATIONS.—For alterations to the cloakrooms and lavatory at the Ketley Bank Council Schools. Plan and specification seen, and forms of tender at the school. Mr. H. E. Wale, Secretary, County-buildings, Shrewsbury.

MARCH 29. — **Shepshed.** — ALTERATIONS.—For alterations, etc., to the Shepshed Council School. Conditions of contract, quantities, and form of tender from the architect, 33, Bowling Green-street, Leicester, on deposit of 5*l.* 5*s.*

MARCH 30.—**Griffithstown.**—ADDITIONS, ETC.—For alterations and additions to St. Hilda's School. Plans and specification with Mr. Harold Griffiths, Arcade-chambers, Newport, Mon. Deposit of 1*l.* 1*s.*

MARCH 30. — **Rhymney.** — STABLES, ETC.—Erection of new stables and motor-house, etc. Plans and specification with Mr. Thomas Roderick, architect, Clifton-street, Aberdare.

APRIL 1.—**Manchester.**—BUILDINGS.—Erection of buildings forming workmen's messroom, kitchen, lavatories, etc., together with steel roof over same, at Bradford-road Station. Specification, quantities, and tender form from Mr. Fredk. A. Price, Superintendent, Gas Department, Town Hall. Deposit of 2*l.* 2*s.*

APRIL 1. — **Southampton.** — REPAIRS, ETC.—For the repair and reconstruction of culverts in the New Forest, on the Southampton and Christchurch and the Southampton and Fordingbridge main roads. Plan and specification and general conditions from Mr. W. J. Taylor, County Surveyor, The Castle, Winchester. Deposit of 1*l.* 1*s.*

APRIL 1. — **Tipperary.**—HOUSES.—For erection of twenty-four two-story stone houses. Plans, specification, and conditions by the Town Surveyor from Mr. T. Dawson, Town Clerk, Emmet-street, Tipperary. Deposit of 1*l.*

APRIL 2. — **Cardiff.**—STORES.—For the erection of stores at the Trade-street Depôt. Drawings and specification seen, and form of tender, with quantities, from the Waterworks Engineer, Mr. C. H. Priestley, M.Inst.C.E., City Hall, Cardiff. Deposit of 2*l.* 2*s.*

APRIL 2. — **Church.**—OFFICES.—Erection of new Council offices in Blackburn-road. Plans seen, and forms of tender, with specification and quantities, from Mr. Henry Ross, architect, Cannon-street, Accrington.

APRIL 3.—**Bradford.**—SHED, ETC.—Erection of a spinning-shed, warehousing, etc., at Lower Wyke, Bradford. Plans, specifications, and quantities with Messrs. Chas. F. L. Horsfall & Son, architects, Lord-street-chambers, Halifax.

* APRIL 4.—**Bognor.**—THREE SHOPS.—Tenders are invited for three shops at Camden-gardens, London-road, Bognor, Sussex. See advertisement in this issue for further particulars.

APRIL 4. — **Towie.** — BRIDGE.—For strengthening the girder bridge over the River Don at Towie. Drawings and general conditions of contract seen, and specification and quantities from Messrs. Walker & Duncan, C.E., 3, Golden-square, Aberdeen.

APRIL 5.—**Brierley.**—SCHOOL.—For erection of Grimethorpe new school. Plans seen, and specifications, with quantities, from the Education Architect, County Hall, Wakefield. Deposit of 1*l.*

APRIL 5.—**Maesteg.**—HOSPITAL.—Erection of a cottage hospital, together with boundary walls and other works, adjoining Neath-road, Maesteg. Plans seen, and specifications, quantities, and

BUILDING—*continued.*

The date given at the commencement of each paragraph is the latest date when the tender, or the names of those willing to submit tenders, may be sent in.

form of tender from the architect, 32, Commercial-street, Maesteg.

APRIL 6. — **Briston.** — COTTAGES.—Erection of three pairs of cottages. Plans, specifications, and conditions with Mr. J. T. Willis, Deputy-Clerk to the Council, Cromer-road, Sheringham.

APRIL 9.—**Isle of Wight.**—COTTAGE, ETC.—For erection of cottage and outbuildings at Bleakdown, Round Manor Farm, Godshill. Plans and specifications with Mr. S. E. Tomkins, architect, 43, High-street, Newport, Isle of Wight.

✱ APRIL 13. — **Abingdon.** — ALTERATIONS TO POST-OFFICE.—The Commissioners of H.M. Works and Public Buildings invite tenders for alterations to post-office. See advertisement in this issue for further particulars.

✱ APRIL 15.—**Tonbridge.**—SCHOOL.—The Kent Education Committee invite tenders for erection of a new girls' school. See advertisement in this issue for further particulars.

APRIL 18. — **Cadney.** — ADDITIONS, ETC.—For alterations and additions to the Council school at Cadney. Quantities and form of tender from Messrs. Scorer & Gamble, architects, Bank-street-chambers, Lincoln. Deposit of 1*l.* 1s

✱ APRIL 19. — **Basingstoke.** — FOUNDATIONS.—The Hampshire Joint Asylums Visiting Committee invite tenders for foundation works for new asylum at Park Prewett, near Basingstoke. See advertisement in this issue for further particulars.

NO DATE. — **Flawborough.** — ADDITIONS.—For additions and alterations to Church Farm House, Flawborough, near Newark, with three cottages, etc. Deposit of 1*l.* to Mr. G. A. Wilson, architect and surveyor, Hartshead-chambers, Sheffield.

NO DATE. — **Great Harwood.** — SHOPS, ETC.—Erection of three shops and one cottage in Park-avenue. Specifications and quantities from Mr. Robert Mercer, architect and surveyor, Park-lane, Great Harwood

NO DATE. — **Headfort.**—CONVENT.—Erection of a new presentation convent at Headfort, Co. Galway. Drawings and specification with Messrs. Doolin & Butler, architects, Mansion House-chambers, 27, Dawson-street, Dublin.

NO DATE. — **Ilkley.**—POST-OFFICE.—Erection of a new post-office in Chantry-drive. Deposit of 1*l.* 1s. to Messrs. Howorth & Howorth, architects, etc., Old Bank-chambers, Cleckheaton.

NO DATE.—**Ipswich.**—CHAPEL.—For erection of Bethesda Baptist Chapel. Deposit of 1*l.* 1s. with the architect, Mr. F. G. Faunch, 76, Cranbrook-road, Ilford, London, E.

NO DATE. — **Kennford.** — RESTORATION.—For restoring the farmhouse at Higher Brenton, Kennford, near Exeter. Messrs. Ellis, Son, & Bowden, F.S.I., surveyors and architects, Bedford-chambers, Exeter.

NO DATE.—**Knottingley.**—HOUSES.—For the erection of seven dwelling-houses in Aire-street. Names to Messrs. Garside & Pennington, architects and surveyors, Pontefract.

NO DATE.—**Pittenweem.**—SCHOOL.—Erection of new school. Quantities from Messrs. Haxton & Walker, architects and surveyors, 3, High-street, Leven, Fife. Deposit of 1*l.* 1s.

NO DATE.—**Staveley.**—SCHOOLROOMS.—Erection of new schoolrooms. Plans and specification with Mr. Frank Windle, architect and surveyor, 183, Chatsworth-road, Chesterfield.

NO DATE.—**Wakefield, etc.**—ADDITIONS, ETC.—For making alterations and additions to the Old Dusty Miller Inn, Kirkgate, Wakefield, and the reconstruction of the Rose and Crown Inn, Ingbirchworth, near Penistone. Messrs. Massie & Holdsworth, architects, Town Hall-chambers, King-street, Wakefield.

NO DATE.—**Wetherby.**—VILLAS, ETC.—For erection of two villas and a motor-house. Names to Mr. C. H. Brooke, Lic.R.I.B.A., architect, 7, Cookridge-street, Leeds.

NO DATE.—**Whitby.**—BUNGALOW.—Erection of a bungalow at Sleights. Mr. George S. French, architect, Normanby-terrace, Whitby.

ENGINEERING, IRON, AND STEEL.

MARCH 26. — **Farnham.**—BRIDGE.—Erection of an oak bridge over the River Wey, in the Gostrey Meadow Recreation Ground. Drawings and specifications with the Surveyor, Council Offices, South-street, Farnham.

APRIL 5.—**Brongwyn.**—BRIDGE.—Erection of a new footbridge at Porth, Brongwyn. Plan and specifications at the Post-office, Ponthirwen. Mr. Thomas Evans, Surveyor, Pantyrlis, Llechryd

FURNITURE, PAINTING, MATERIALS, etc.

MARCH 23.—**Aberdare.**—PAINTING.—For painting seventeen villas, Elm-grove, for the Waynes Building Club. Specifications with Mr. Alec. S. Cameron, architect, 1, Glanant-street, Aberdare.

✱ MARCH 26. — **Willesden.** — VANS. — The Willesden D.C. invite tenders for supply of slop vans and water vans. See advertisement in this issue for further particulars.

✱ MARCH 28. — **Leytonstone.** — AIR-LIFT PLANT AND CLEARING BOREHOLE.—The West Ham Guardians invite tenders for clearing the borehole of an artesian well and provision of temporary air-lift plant, and also for supply of permanent air-lift plant, together with fixing, etc. See advertisement in this issue for further particulars.

MARCH 29.—**Ealing.**—PAINTING.—For external painting of municipal cottages in North and South roads, South Ealing. Specifications seen, and forms of tender from Mr. C. Jones, M.Inst.C.E., Borough Engineer, Town Hall, Ealing, W. Deposit of 1*l.* 1s.

✱ APRIL 3. — **Hammersmith.** — DISPOSAL OF SANITARY FITTINGS.—The Hammersmith B.C. invite tenders for purchase and removal of fittings and fixtures and part demolition of sanitary convenience. See advertisement in this issue for further particulars.

✱ APRIL 8.—**Windsor.**—DEMOLITION, ETC.—The Secretary of State for War invites tenders for the demolition of two blocks of soldiers' quarters and part of latrines; also filling basements, making-up parades, gravelling, etc. See advertisement in this issue for further particulars.

ROADS, SANITARY AND WATER WORKS.

✱ MARCH 27. — **Cheshire.** — MACADAM ROAD.—Messrs. Lever Brothers, Ltd., Port Sunlight, invite tenders for macadam road (length about three miles) on Storeton Estate. See advertisement in this issue for further particulars.

MARCH 27. — **Enfield.** — ROAD.—For making-up the private street known as Jasper-road. Plans and specifications seen, and forms of tender from Mr. Richard Collins, Public Offices, Enfield, Middlesex.

APRIL 26.—**Brighton.**—SEWERS.—For the construction of sewers. Specifications and forms of tenders at the office of the Borough Surveyor at the Town Hall, Brighton. Deposit of 1*l.* 1s.

✱ APRIL 3. — **Hammersmith.**—WOOD-PAVING.—The Hammersmith B.C. invite tenders for repaving, with creosoted deal blocks, portion of Hammersmith-road. See advertisement in this issue for further particulars.

Public Appointment.

Nature of Appointment.	By whom Advertised.	Salary.	Application to be in
*BUILDING INSPECTOR	Plymouth Borough Council...	100*l.* per annum	April 10

Auction Sales.

Nature and Place of Sale.	By whom Offered.	Date of Sale.
*FREEHOLD BUILDING LAND, CATFORD, S.E.—Plough Hotel, Lewisham	Jesse W. Jones	Mar. 26
*STOCK AND PLANT OF STONE MERCHANTS, STOCKWELL, S.W.—On the Premises	J. T. Skelding & Holland	Mar. 27
*BUILDERS' & CONTRACTORS' STOCK & PLANT—At Scrafton-road Works, Ilford-lane	H. W. Smith	Mar. 28
*STKS. OF ELECTRICIAN & BLDR.'S MERCHT. & ENGR.—86, Banner-st., Golden-la., E.C.	Fryett, White, & Co.	Mar. 28
*HOUSE AND SHOP, ST. PANCRAS—At the Mart	Rutley, Son, & Vine	April 2
*HOUSES, SHOPS, ETC.—At the Mart	Rutley, Son, & Vine	April 2
*LEASEHOLD PROPERTY, PLANT, MACHINERY, & BUILDER'S STK.—On the Prems.	Bradshaw, Brown, & Co.	April 11

LAW REPORT—*continued from page 344.*

position in the medical profession—who would not be likely to and could not be expected to attend upon a 1*l.* 1s. subpœna. Dr. Wilcox did not attend, and then, on behalf of the applicant, the certificates were tendered as evidence, and although he (Counsel) objected, the learned County Court Judge admitted them as evidence. There was no reason why the house-surgeon who acted at the hospital under Dr. Wilcox could not have been called as a witness. If their Lordships ordered a new trial he (Counsel) would undertake to call Dr. Wilcox as a witness. The County Court Judge held upon the evidence that Richards was incapacitated by an accident arising in the course of his employment, and made an award in his favour for 17s. 6d. a week compensation during incapacity. He submitted that in the circumstances the case ought to be remitted to the County Court and be retried.

Mr. Jacobs, for the applicant, said he could not contend that the certificates were properly admitted as evidence by the County Court Judge. He submitted, however, that there was ample evidence to justify the finding of the County Court Judge. It was due to the solicitors instructing him to say that they had done all they could to get Dr. Wilcox to give evidence; but the latter was prevented from doing so on account of being compelled to attend an inquiry at the Home Office.

In the result their Lordships held that in the circumstances the case must be referred back to be reheard by the learned County Court Judge.

Order accordingly.

PATENTS.

APPLICATIONS PUBLISHED.*

3,937 of 1911.—Frederick William Campbell: Removable cores for forming hollow piles, columns, and the like, and for forming holes in concrete structures generally.

4,421 of 1911.—Frederick George Jones: Conveyor rollers.

4,906 of 1911.—John Hugh McCoy: Concrete water tanks.

5,000 of 1911.—Alfred Charles Blackmore: Mechanism for connecting doors so that the opening of one simultaneously effects the opening of the other.

5,402 of 1911.—Herbert Abraham and Harold Woodbury Haines: Waterproof cement, mortar, and miscible pastes for making the same, and processes of making such pastes and making waterproof cement, mortar, and concrete.

7,016 of 1911.—Fred Watson: Back boilers for use in connexion with domestic fireplaces.

7,047 of 1911.—Frederick Marshall: Fire-escapes.

7,929 of 1911.—James Henry Birtwistle: Grates and fuel holders.

8,186 of 1911.—Frank Wilford Mellows and William Arthur Price: Mode of and means for use in glazing windows and the like.

8,689 of 1911.—John Alexander Parker and John Wright: Chimney and ventilating shaft tops.

9,310 of 1911.—Herbert Linwood Sleigh: An attachment for use in connexion with motor-car and other doors, and folding windows, to prevent rattling and slamming.

9,350 of 1911.—Alfred Acroyd, Percy Churchfield Larmuth, and John Reynolds: Ventilators and the like.

9,382 of 1911.—James Henry Bennett and George Richard Leadsom: Apparatus for operating casements, fanlights, and the like.

* All these applications are in the stage in which opposition to the grant of Patents upon them can be made.

SOME RECENT SALES OF PROPERTY:

ESTATE EXCHANGE REPORT.

March 8.—By WINTERTON & SONS.

Burntwood, Staffs.—Pipe Grange Farm, 23 a. 0 r. 26 p., c.	£870

March 12.—By HUNTER & HUNTER.

Notting Hill.—Hazelwood-cres., f.g. rents 42*l.*, reversion in 54 yrs.	850
Adair-rd., f.g. rents 65*l.*, reversion in 54 yrs.	1,190
St. John's Wood.—Cavendish-rd., l.g. rents 67*l.* 10s., u.t. 8½ yrs., g.r. nil.	200
Belgravia.—Wilton-st., l.g. rents 45*l.* 10s., u.t. 9 yrs., g.r. 4s.	470
Paddington.—Clarendon-st., l.g. rents 49*l.*, u.t. 40 yrs., g.r. 1*l.* 18s.	670
11 and 12, Star-st., u.t. 9 yrs., g.r. 12*l.* 12s., y.r. 105*l.*	200

***Contractions used in these lists.*—F.g.r.** for freehold ground-rent; **l.g.r.** for leasehold ground-rent; **i.g.r.** for improved ground-rent; **g.r.** for ground-rent; **r.** for rent; **f.** for freehold; **c.** for copyhold; **l.** for leasehold; **p.** for possession; **e.r.** for estimated rental; **w.r.** for weekly rental; **q.r.** for quarterly rental; **y.r.** for yearly rental; **u.t.** for unexpired term; **p.a.** for per annum; **yrs.** for years; **la.** for lane; **st.** for street; **rd.** for road; **sq.** for square; **pl.** for place; **ter.** for terrace; **cres.** for crescent; **av.** for avenue; **gdns.** for gardens; **yd.** for yard; **gr.** for grove; **b.h.** for beerhouse; **p.h.** for public-house; **o.** for offices; **s.** for shops; **ct.** for court.

PRICES CURRENT OF MATERIALS.

*** Our aim in this list is to give, as far as possible, the *average* prices of materials, not necessarily the lowest. Quality and quantity obviously affect prices—a fact which should be remembered by those who make use of this information.

BRICKS, &c.

Per 1000 Alongside, in River.	£ s. d.
Best Stocks	1 14 0
Picked Stocks for Facings	2 10 0

Per 1000, Delivered at Railway Depôt.	£ s. d.		£ s. d.
Flettons	1 13 0	Best Blue Pressed Staffordshire	3 15 0
Best Fareham Red	3 12 0	Do. Bullnose	4 0 0
Best Red Pressed Ruabon Facing	5 0 0	Best Stourbridge Fire Bricks	4 0 0
GLAZED BRICKS—			
Best White, Ivory, and Salt Glzd.Str'tch'rs	11 7 6	Double Headers	13 17 6
Headers	10 17 6	One Side and two Ends	17 17 6
Quoins, Bullnose, and ½ in. Flats	14 17 6	Two Sides and one End	18 17 6
D'ble Stretchers	16 17 6	Splays & Squints	16 7 6

Second Quality £1 10s. per 1000 less than best.

	s. d.	
Thames and Pit Sand	6 9	per yard, delivered.
Thames Ballast	5 6	" "
Best Portland Cement	31 0	per ton, "
Best Ground Blue Lias Lime	19 0	" "

NOTE—The cement or lime is exclusive of the ordinary charge for sacks.

Grey Stone Lime ..... 13s. 0d. per yard delivered.
Stourbridge Fireclay in sacks 27s. 0d. per ton at rly dpt.

STONE.

Per Ft. Cube.

	s. d.
BATH STONE—delivered on road waggons, Paddington Depôt	1 6½
Do. do. delivered on road waggons, Nine Elms Depôt	1 8½
PORTLAND STONE (20 ft. average)—	
Brown Whitbed, delivered on road waggons, Paddington Depôt, Nine Elms Depôt, or Pimlico Wharf	2 3
White Basebed, delivered on road waggons Paddington Depôt, Nine Elms Depôt, or Pimlico Wharf	2 4½

Per Ft. Cube, delivered at Railway Depôt.

	s. d.		s. d.
Ancaster in blocks	1 10	Closeburn Red Freestone	2 0
Beer in blocks	1 6	Red Mansfield Freestone	2 4
Greenshill in blocks	1 10	Talacre & Gwespyr Stone	2 4
Darley Dale in blocks	2 4		
Red Corsehill in blocks	2 3		

YORK STONE—*Robin Hood Quality.*

Per Ft. Cube, Delivered at Railway Depôt.	s. d.
Scappled random blocks	2 10

Per Ft. Super., Delivered at Railway Depôt.

6 in. sawn two sides landings to sizes (under 40 ft. super.)	2 3
6 in. rubbed two sides ditto, ditto	2 6
3 in. sawn two sides slabs (random sizes)	0 11½
2 in. to 2½ in. sawn one side slabs (random sizes)	0 7
1½ in. to 2 in. ditto, ditto	0 6

HARD YORK—

Per Ft. Cube, Delivered at Railway Depôt.

Scappled random blocks	3 0

Per Ft. Super., Delivered at Railway Depôt.

6 in. sawn two sides landing to sizes (under 40 ft. super.)	2 8
6 in. rubbed two sides ditto	3 0
3 in. sawn two sides slabs (random sizes)	1 2
2 in. self-faced random flags	0 5

SLATES.

Per 1000 of 1200 at Railway Depôt.

In. In.	£ s. d.	In. In.	£ s. d.
20×10 best blue Bangor	13 2 6	20×10 best Eur'ka unfading green	15 17 6
20×12 ditto	13 17 6	20×12 ditto	18 7 6
20×10 1st quality ditto	13 0 0	18×10 ditto	13 5 0
20×12 ditto	13 15 0	16×8 ditto	10 5 0
16×8 ditto	7 5 0	20×10 permanent green	11 12 6
22×10 best blue Portmadoc	12 12 6	18×10 ditto	9 12 6
16×8 ditto	6 12 6	16×8 ditto	6 12 6

TILES.

At Railway Depôt.

	s. d.		s. d.
Best plain red roofing (per 1000)	42 0	Best "Hartshill" brand, plain sand-faced (per 1000)	45 0
Hip and Valley (per doz.)	3 7	Do. pressed (per 1000)	42 6
Best Broseley (per 1000)	50 0	Do. Ornamental (per 1000)	47 6
Do. Ornamental (per 1000)	52 6	Hip (per doz.)	4 0
Hip and Valley (per doz.)	4 0	Valley (per doz.)	3 6
Best Ruabon red, brown, or brindled (Edw'ds) (per 1000)	57 6	Staffords. (Hanley) Reds or Brindled (per 1000)	42 6
Do. Ornamental (per 1000)	60 0	Hand-made sand-faced (per 1000)	45 0
Hip (per doz.)	4 0	Hip (per doz.)	4 0
Valley (per doz.)	3 0	Valley (per doz.)	3 6

WOOD.

BUILDING WOOD.	At per standard. £ s. d.	£ s. d.
Deals: best 3 in. by 11 in. and 4 in. by 9 in. and 11 in.	14 0 0 ...	15 10 0
Deals: best 3 by 9	13 10 0 ...	14 10 0

WOOD (*Continued*).

BUILDING WOOD (*Continued*)—	At per standard. £ s. d.	£ s. d.
Battens: best 2½ in. by 7 in. and 8in., and 3 in. by 7 in. and 8 in.	11 10 0 ...	12 10 0
Battens: best 2½ by 6 and 3 by 6	0 10 0	less than 7 in. and 8 in.
Deals: seconds	1 0 0	less thn best.
Battens: seconds	0 10 0	" "
2 in. by in. and 2 in. by 6 in.	9 10 0 ...	10 10 0
2 in. by 4½ in. and 2 in. by 5 in.	9 0 0 ...	10 0 0
Foreign Sawn Boards—		
1 in. and 1¼ in. by 7 in.	0 10 0	more than battens.
¾ in.	1 0 0	"
Fir timber: best middling Danzig or Memel (average specification)	At per load of 50 ft. 5 0 0 ...	5 10 0
Seconds	4 10 0 ...	5 0 0
Small timber (8 in. to 10 in.)	3 17 6 ...	4 0 0
Small timber (6 in. to 8 in.)	3 5 0 ...	3 10 0
Swedish balks	2 12 6 ...	3 0 0
Pitch-pine timber (30 ft. average)	5 5 0 ...	6 0 0

JOINERS' WOOD.	At per standard. £ s. d.	£ s. d.
White Sea: first yellow deals, 3 in. by 11 in.	24 10 0 ...	25 10 0
3 in. by 9 in.	22 10 0 ...	23 10 0
Battens, 2½ in. and 3 in. by 7 in.	17 0 0 ...	18 0 0
Second yellow deals, 3in. by 11in.	19 0 0 ...	20 0 0
" " 3 in. by 9 in.	18 0 0 ...	19 10 0
Battens, 2½ in. and 3in. by 7 in.	14 0 0 ...	15 0 0
Third yellow deals, 3 in. by 11 in. and 9 in.	14 0 0 ...	15 0 0
Battens, 2½ in. and 3 in. by 7 in.	11 10 0 ...	12 10 0
Petersburg: first yellow deals, 3 in. by 11 in.	21 10 0 ...	22 10 0
Do. 3 in. by 9 in.	18 10 0 ...	19 10 0
Battens	14 0 0 ...	15 0 0
Second yellow deals, 3 in. by 11 in	16 10 0 ...	17 10 0
Do. 3 in. by 9 in.	15 0 0 ...	16 0 0
Battens	11 10 0 ...	12 10 0
Third yellow deals, 3in. by 11 in.	13 10 0 ...	14 10 0
Do. 3 in. by 9 in.	13 0 0 ...	14 0 0
Battens	10 10 0 ...	11 0 0
White Sea and Petersburg—		
First white deals, 3 in. by 11 in.	15 0 0 ...	16 0 0
" " 3 in. by 9 in.	14 0 0 ...	14 10 0
Battens	11 10 0 ...	12 10 0
Second white deals, 3in. by 11in.	14 0 0 ...	15 0 0
" " 3 in. by 9 in.	13 0 0 ...	14 0 0
Battens	10 10 0 ...	11 0 0
Pitch-pine: deals	19 0 0 ...	21 0 0
Under 2 in. thick extra	0 10 0 ...	1 0 0
Yellow Pine—First, regular sizes	48 0 0	upwards.
Oddments	32 0 0	"
Seconds, regular sizes	33 0 0	"
Oddments	28 0 0	"
Kurai Pine—Planks per ft. cube.	0 4 6 ...	0 6 0
Danzig and Stettin Oak Logs—		
Large, per ft. cube	0 3 0 ...	0 3 9
Small " "	0 2 6 ...	0 2 6
Wainscot Oak Logs, per ft. cube	0 6 6 ...	0 8 0
Dry Wainscot Oak, per ft. sup. as inch	0 0 10 ...	0 1 0
¼ in. do. do.	0 0 8½ ...	—
Dry Mahogany—Houndras, Tabasco, per ft. super. as inch	0 0 10 ...	0 1 1
Selected, Figury, per ft. super. as inch	0 1 6 ...	0 2 6
Dry Walnut, American, per ft. super. as inch	0 0 10 ...	0 1 0
Teak, per load	18 0 0 ...	22 0 0
American Whitewood planks, per ft. cube	0 5 0 ...	0 6 0

Prepared Flooring, etc.—	Per square. £ s. d.	£ s. d.
1 in. by 7 in. yellow, planed and shot	0 13 6 ...	0 17 0
1 in. by 7 in. yellow, planed and matched	0 14 0 ...	0 18 0
1¼ in. by 7 in. yellow, planed and matched	0 16 0 ...	1 0 0
1 in. by 7 in. white, planed and shot	0 12 0 ...	0 14 6
1 in. by 7 in. white, planed and matched	0 12 6 ...	0 15 0
1¼ in. by 7 in. white, planed and matched	0 15 0 ...	0 16 6
¾ in. by 7 in. yellow, matched and beaded or V-jointed brds.	0 11 0 ...	0 13 6
1 in. by 7 in. " "	0 14 0 ...	0 18 6
¾ in. by 7 in. white " "	0 10 0 ...	0 11 0
1 in. by 7 in. " "	0 12 9 ...	0 15 0

6 in. at 6d. to 9d. per square less than 7 in.

JOISTS, GIRDERS, &c.

	In London, or delivered Railway Vans, per ton. £ s. d.	£ s. d.
Rolled Steel Joists, ordinary sections	7 10 0 ...	8 0 0
Compound Girders, ordinary sections	9 10 0 ...	10 0 0
Steel Compound Stanchions	11 0 0 ...	12 0 0
Angles, Tees, and Channels, ordinary sections	9 10 0 ...	10 0 0
Flitch Plates	9 10 0 ...	9 10 0
Cast Iron Columns & Stanchions, including ordinary patterns	7 10 0 ...	8 10 0

METALS.

	Per ton, in London. £ s. d.	£ s. d.
IRON—		
Common Bars	9 0 0 ...	9 10 0
Staffordshire Crown Bars, good merchant quality	9 5 0 ...	9 15 0
Staffordshire "Marked Bars"	11 0 0 ...	—
Mild Steel Bars	9 5 0 ...	9 15 0
Hoop Iron, basis price	10 0 0 ...	—
" " Galvanised	17 10 0 ...	—
(*And upwards, according to size and gauge.)		
Sheet Iron Black—		
Ordinary sizes to 20 g.	10 5 0 ...	—
" " 24 g.	11 5 0 ...	—
" " 26 g.	12 15 0 ...	—
Sheet Iron, Galvanised, flat, ordinary quality—		
Ordinary sizes, 6 ft. by 2 ft. to 3 ft. to 20 g.	15 10 0 ...	—
Ordinary sizes to 22 g. and 24 g.	16 0 0 ...	—
" " 26 g.	17 0 0 ...	—
Sheet Iron, Galvanised, flat, best quality—		
Ordinary sizes to 20 g.	18 10 0 ...	—
" " 22 g. and 24 g.	19 0 0 ...	—
" " 26 g.	20 10 0 ...	—

METALS (*Continued*).

IRON (*Continued*)—	Per ton, in London. £ s. d.	£ s. d.
Galvanised Corrugated Sheets—		
Ordinary sizes, 6ft. to 8ft. 20 g.	15 0 0 ...	—
" " 22 g. and 24 g.	15 5 0 ...	—
" " 26 g.	16 15 0 ...	—
Best Soft Steel Sheets, 6 ft. by 2 ft. to 3 ft. to 20 g. and thicker	12 10 0 ...	—
Best Soft Steel Sheets, 2 g. & 24 g.	13 10 0 ...	—
" " 26 g.	15 10 0 ...	—
Cut Nails, 3 in. to 6 in.	11 0 0 ...	11 10 0
(Under 3 in., usual trade extras.)		

LEAD, &c.

	£ s. d.	
LEAD—Sheet, English, 4lb. and up	19 17 6 ...	—
Pipe in coils	20 7 6 ...	—
Soil pipe	23 7 6 ...	—
Compo pipe	23 7 6 ...	—
ZINC—Sheet—	In casks of 10 cwt.	
Vielle Montagne	33 10 0 ...	—
Silesian	33 5 0 ...	—
Zinc, in bundles, 1s. per cwt. extra.		
COPPER—		
Strong Sheet per lb.	0 1 0 ...	—
Thin " "	0 1 1 ...	—
Copper nails "	0 0 10 ...	—
Copper wire "	0 0 10 ...	—
BRASS—		
Strong Sheet "	0 0 11 ...	—
Thin "	0 1 0 ...	—
TIN—English Ingots "	0 1 11 ...	—
SOLDER—Plumbers' "	0 0 8½ ...	—
Tinmen's "	0 0 11 ...	—
Blowpipe "	0 1 2 ...	—

ENGLISH SHEET GLASS IN CRATES OF STOCK SIZES.*

Per Ft., Delivered.

15 oz. thirds	2½d.	26 oz. fourths	3½d.
" fourths	1½d.	32 oz. thirds	5d.
21 oz. thirds	3d.	" fourths	4½d.
" fourths	2½d.	Fluted Sheet, 15 oz.	3½d.
26 oz. thirds	4d.	" 21 oz.	4½d.

ENGLISH ROLLED PLATE IN CRATES OF STOCK SIZES.*

Per Ft., Delivered.

¼ Hartley's	2d.	Figured Rolled, Oxford Rolled, Oceanic, Arctic, Muffled, and Rolled Cathedral, white	3½d.
⅜ "	2½d.	Ditto, tinted	5d.
½ "	2½d.		

* Not less than three crates.

OILS, &c.

		£ s. d.
Raw Linseed Oil in pipes	per gallon	0 3 3
" " " in barrels	"	0 3 4
" " " in drums	"	0 3 6
Boiled " in barrels	"	0 3 6
" " " in drums	"	0 3 9
Turpentine in barrels	"	0 2 10
" in drums	"	0 3 0
Genuine Ground English White Lead, per ton		27 10 0
Red Lead, Dry	"	24 0 0
Best Linseed Oil Putty	per cwt.	0 10 0
Stockholm Tar	per barrel	1 12 0

VARNISHES, &c.

	Per gallon. £ s. d.
Fine Pale Oak Varnish	0 8 0
Pale Copal Oak	0 10 6
Superfine Pale Elastic Oak	0 12 6
Fine Extra Hard Church Oak	0 10 0
Superfine Hard-drying Oak, for seats of Churches	0 14 6
Fine Elastic Carriage	0 12 0
Superfine Pale Elastic Carriage	0 16 0
Fine Pale Maple	0 10 0
Finest Pale Durable Copal	0 18 0
Extra Pale French Oil	1 1 0
Eggshell Flating Varnish	0 18 0
White Pale Enamel	1 4 0
Extra Pale Paper	0 12 0
Best Japan Gold Size	0 10 6
Best Black Japan	0 16 0
Oak and Mahogany Stain	0 9 0
Brunswick Black	0 8 0
Berlin Black	0 16 0
Knotting	0 10 9
French and Brush Polish	0 10 6

TO CORRESPONDENTS.

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TENDERS.

Communications for insertion under this heading should be addressed to "The Editor," and must reach us *not later than* 6 p.m. on *Wednesday*. [N.B.—We cannot publish Tenders unless authenticated either by the architect or the building owner; and we cannot publish announcements of Tenders accepted unless the amount of the Tender is stated, nor any list in which the lowest Tender is under 100*l.* unless in some exceptional cases and for special reasons.]

* Denotes *accepted*. † Denotes *provisionally accepted*.

BARGOED (Glam).—For the erection of a new infants' school at South Bargoed, for the Glamorgan County Education Committee. Mr. D. Pugh-Jones, M.S.A., County Architect, Cardiff:—

R. Jones, Caerphilly*	£2,792 7 10

BISHOP AUCKLAND.—For erection of a new mortuary at the Workhouse, for the Guardians of the Poor of Auckland Union. Mr. F. D. Livesay, architect, Bishop Auckland. Quantities by the architect:—

J. Braithwaite & Son	£400 0 0	G. W. Hetherington	£373 14 0
F. Sowerby	390 0 0	T. Hilton	367 5 6
W. Hope & Sons	383 15 0	J. T. Douglas & Son, Bishop Auckland*	366 18 0
T. Manners	381 13 0		
G. H. Bell	378 10 0		

BLACKBURN.—For extension of the Town Hall. Messrs. Briggs, Wolstenholme, & Thornely, and Messrs. Stones, Stones, & Atkinson, architects, Blackburn:—

W. J. Woof Cronshaw & Sons, Pump-street, Blackburn*	£32,475

CHRISTCHURCH (Mon).—For erection of seven houses, piggeries, etc. Mr. C. F. Ward, A.R.I.B.A., Borough Architect:—

G. Edwards	£5,583 0 0	C. H. Reed	£4,668 12 3
H. Thomas & Son	5,107 0 0	P. H. Saunders	4,654 10 0
F. Jerrett	5,034 9 0	Morris & Biddle	4,572 18 11
E. E. Jenkins	4,900 8 7	F. W. Powles	4,293 1 7
F. C. Parfitt	4,880 0 0	J. H. Williams	4,280 0 0
Kirby & Westacott	4,816 0 0	H. Smith	4,136 0 0
E. C. Jordan	4,770 14 5	W. Moore	4,072 0 0
G. F. Leadbeter	4,700 0 0	R. W. Moont	3,921 0 0

[Borough Architect's estimate, £4,297.]

GOSPORT.—For extension of Alverstoke Laundries, Ltd., Elson, Gosport, for Alverstoke Laundries Company. Mr. A. E. Cogswell, architect, Portsmouth:—

S. Salter	£811 0	J. Hunt	£712 10
J. Croad	765 0	F. J. Privett	675 0
J. Crockerell	763 0		

HARLESDEN.—For erection of a new police-station at Harlesden. Mr. J. Dixon Butler, F.R.I.B.A., Architect and Surveyor to the Metropolitan Police District, New Scotland-yard, S.W. Quantities by Messrs. Thurgood, Son, & Chidgey, 8, Adelphi-terrace, Strand, W.C.:—

Shurmur & Sons	£11,362	Willmott & Sons	£10,864
Holloway Bros., Ltd.	11,292	Holliday & Greenwood, Ltd.	10,819
Ashby & Horner	11,264	Prestige & Co., Ltd.	10,549
F. & H. F. Higgs	11,159	Sabey & Son, Ltd.	10,397
Mowlem & Co., Ltd.	11,045	Patman & Fotheringham, Ltd.	10,373
Grover & Son	11,043	G. Godson & Sons	10,296
Killby & Gayford, Ltd	10,948		
W. Moss & Sons, Ltd.	10,940		

HAYES.—For laying-out site, construction of roads, etc., and erection of fifty-one houses at Elder's Field, for the Hayes Urban District Council. Mr. D. C. Fiddler, Council Engineer and Surveyor:—

C. F. Kearley Holloway Bros., Ltd.	£11,789 0 0	Y. J. Lovell & Son	£9,619 0 0
	11,500 0 0	A. E. Knight	8,930 0 0
Wood Bros.	10,500 0 0	W. J. Wilkinson	8,671 0 0
C. Watts & Co.	10,467 0 0	C. J. Dusgate, Hayes*	8,455 0 0
A. Winch	9,977 11 4		
G. Porter	9,868 0 0		
C. Groom	9,808 5 3		

[Surveyor's estimate, £8,510.]

HOVE.—For erection of a greenhouse in St. Ann's Well Gardens:—

McKellar & Westerman, 136, Church-road, Hove	£84 10

HOVE.—For building shedding, stores, and other works at Erroll-road Depôt. Mr. H. H. Scott, Borough Surveyor, Town Hall, Hove:—

McKellar & Westerman, 136, Church-road, Hove	£989

HULL.—For erection of East Hull Picture Drome. Mr. J. Abbott, architect and surveyor, Hull:—

G. H. Panton & Sons, Ltd.	£2,064 0 0	J. Houlton & Sons	£1,870 0 0
J. T. Levitt	2,000 0 0	G. Houlton & Sons	1,845 0 0
J. H. Fenwick	1,970 0 0	T. Goates & Sons, 39, Brunswick-avenue, Hull*	1,786 0 0
A. Lison	1,963 13 6		
C. T. Kettlewell	1,958 0 0	T. E. Sugden	1,775 0 0
F. Southern	1,888 18 0		

LLANBRADACH (Coedybrain, Glam).—For the erection of a new boys' school at Coedybrain, for the Glamorgan Education Committee. Mr. D. Pugh-Jones, F.S.I., M.S.A., County Architect, Cardiff:—

Hamilton & Millard, Caerphilly*	£5,826 7 5

LONDON.—For erection of a building to contain twelve slipper-baths, with waiting-room, etc., in Fen-street, Tidal Basin. Mr. John G. Morley, Borough Engineer, West Ham:—

A. H. Fryd	£1,358 0	A. J. & S. E. Allerton	£1,077 0
H. C. Horswill	1,190 0	J. W. Jerram	1,059 0
W. J. Clemans	1,166 6	L. Lown & Co., Crayford-road, N.*	1,041 16
A. E. Symes	1,137 0		
A. Newman, Ltd.	1,126 0		

NELSON (Glam).—For the erection of a new infants' school, for the Glamorgan Education Committee. Mr. D. Pugh-Jones, M.S.A., County Architect, Cardiff:—

J. Williams, Abertridwr, near Caerphilly*	£2,776

NEW BROMPTON (Kent).—For erection of St. Luke's Vicarage House. Messrs. Cutts, Johnson, & Boddy, architects, 14, Southampton-street, Strand:—

West Bros.	£1,729	C. E. Skinner	£1,618
Lovell & Son	1,666	H. E. Phillips, Gillingham*	1,487
F. C. Langley	1,665		
Denne & Son	1,620		

ORMSKIRK.—For alterations at the small hospital block at the workhouse, for the Ormskirk Board of Guardians. Mr. James Dod, architect:—

R. Taylor & Son, Church-road, West Ormskirk	£748 17

PORTSMOUTH.—For alterations at Driver's Restaurant, Edinburgh-road. Mr. A. E. Cogswell, architect, Portsmouth:—

Wakeham Bros.	£1,187 9 0	Tay & Co.	£1,034 0 0
Porter	1,170 0 0	F. J. Privett	1,018 0 0
E. & A. Sprigings	1,155 0 0	J. Tanner	1,004 0 0
Durrant	1,118 5 6	J. Croad	945 0 0
H. Jones & Sons	1,092 15 0	J. Crockerell	927 0 0

SONNING COMMON.—For erection of school and schoolhouse at Eve and Dunsden:—

E. Hughes	£2,868 16	Walden & Cox	£2,504 0
Cadel Bros.	2,765 0	Espley & Co., Ltd.	2,500 0
Wooldridge & Simpson	2,691 0	Franklin, Ltd	2,388 0
Bosher, Sons, & Co.	2,622 0	A. G. Butler	2,387 0
F. Newberry	2,622 0	A. Cox & Sons, Abingdon, Berks*	2,307 0
M. E. Fitt	2,567 0		
J. Smallbone & Sons	2,547 0		

SOUTHSEA.—For alterations to business premises, Elm-grove, Southsea, for Messrs. T. A. White & Son. Mr. A. E. Cogswell, architect, Prudential-buildings, Portsmouth:—

Salter	£574	Crockerell	£468
Croad	515	Jones	434
Privett	476		

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